



# Overview Colombia & Infrastructure Opportunities



2018

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# Presentation

Colombia continues to implement and further develop its aggressive program to strengthen its infrastructure. After having successfully awarded – during only the past four years – an unprecedented road concession plan that included almost 3,000 Km and requires about USD 9.3 billion in CAPEX for public initiatives and approximately 2,200 Km and USD 7.8 billion in CAPEX for unsolicited proposals, the country is now focused on developing transport logistics solutions, clean energy capabilities, mass transit and more social infrastructure, such as hospitals, schools, government buildings and prisons, among others. Finally, the government has also created regulation and market conditions for facilitating unsolicited proposals. The figure at the side shows the investment needs in infrastructure up to 2035.

The sheer size of the works to be implemented and the required investment has demonstrated that international investors, debt providers, constructors and developers will be required to actively participate in order to make the program viable. Fortunately, the Colombian government has had a sustained policy of attracting private investment and has actively worked on improving the risk allocation for these projects and strengthening the institutional framework.

All of the above presents an unprecedented opportunity for private companies. The opportunities highlighted in this document reflect a great variety of products and services that can be provided from the private companies, such as equipment, technology, financing, insurance as well as construction and operational capabilities.

We're confident that Colombia represents a solid and interesting opportunity for private companies to diversify its export base and international footprint. We expect this opportunities document to become a tool for understanding the Colombian infrastructure market and for identifying profitable opportunities to leverage private companies' international growth.

## Investment needs in infrastructure up to 2035



**USD 139 billion**



**USD 61 billion**  
Road network intervention



**USD 5.3 billion**  
31 Airport projects



**USD 3.6 billion**  
Railway rehabilitation



**USD 18 billion**  
Investment in healthcare



**USD 34 billion**  
Investment in education, justice and housing



**USD 20 billion**  
Investment in other sectors  
(water, waste treatment, energy, fluvial)

# Contents

	<b>Pág</b>
<b>1. Introduction to Colombia</b>	<b>4</b>
1.1 Colombia as an investment destination	6
<b>2. Background</b>	<b>14</b>
<b>3. Infrastructure sectors</b>	<b>33</b>
<b>3.1. Transport</b>	<b>34</b>
a. Roads	36
b. Airports	46
c. Railways	50
d. Public transportation	56
e. Ports	62
<b>3.2. Fluvial</b>	<b>66</b>
<b>3.3. Water</b>	<b>68</b>
<b>3.4. Social</b>	<b>71</b>
a. Healthcare	72
b. Education	74
c. Public buildings	76
<b>3.5. Energy</b>	<b>79</b>
<b>3.6. Oil and gas</b>	<b>86</b>
<b>3.7. Mining</b>	<b>89</b>
<b>4. KPMG</b>	<b>92</b>

# 1. Introduction to Colombia



## 10 Reasons to Invest in Colombia

1

### **Attractive Business Environment**

Colombia is part of the countries with better economic stability of the region. In the last five years, have been presenting an increment of 4.8%.

2

### **Trustworthy Associate**

Is a country with investment grade given by Standard & Poor's, Moody's and Fitch. In Agreement with Doing Business 2017, Colombia is the third best country in the region for doing business as the 59th in the world, for the same purpose.

3

### **Economy Linked to the World Market**

Colombia have 10 Free Trade Agreements (FTA) and 3 Partial reach agreements, having access to approximately 45 countries and its consumers.

4

### **Interconnected to the World**

Colombia possess a technological infrastructure supported by nine submarine cables that enable country's integration. Also, its geographical location gives it an advantage.

5

### **Qualified Workforce**

Colombia, according to the IMD ranking in 2017, is one of the countries in the region with the best qualified workforce above Brazil and Peru, among others.

6

### **Ongoing Work for Innovation**

Innovation is one of the priority components for the product and services transformation of the country.

7

### **Competitive Legal Framework**

Government commitment for investment incentives and stability for investors. Since 2005, the country has implemented 29 reforms.

8

### **Government Commitment for Country's Development**

Colombia has a National Development Plan (PND) that involves primary necessities of the country and executes an action plan for increasing competitiveness and growth. Also, the Productive Transformation plan (PTP) centers in increasing effectiveness and competitiveness in 22 economical sectors, through a combination of public and private sector.

9

### **Among the Most Competitive Countries in PPP's**

Colombia is the third most competitive country in the world in terms of regulation to finance infrastructure works through the Public-Private Partnerships (PPP) scheme, according to the World Bank.

10

### **OECD member**

Colombia was linked to the intergovernmental Organization for Economic Co-operation and Development (OECD) that stimulate world trade and economic growth. Colombia has been subject to in-depth reviews by 23 OECD Committees and has introduced major reforms for the following: legislation, policies and practices with OECD standards, labor issues, justice system, corporate governance of state-owned enterprises, anti-bribery and waste management.

Source: Procolombia, Portafolio, IMD 2017, BID, El Pais, OECD

# 1.1. Colombia as an Investment Destination

## Overview

- Over the past few years, Colombia has significantly improved its macroeconomic performance, internal security and stability, and as a result social indicators have also improved.
- Colombia has achieved a solid structural growth given an increase in the investment rate, which, in turn, generates higher productivity levels.
- The Colombian economy maintains a moderate inflation and has never driven hyperinflation as other countries in the region.
- In 2011, Colombia was awarded investment grade rating from all the main rating agencies in the world.
- Colombia is aggressively negotiating free trade and investment agreements in order to expand its markets.
- The government is fully committed to reassuring favorable conditions so as to improve domestic and foreign investment. This is reflected in the establishment of free trade zones and legal stability contacts.
- Colombia has easy access to global markets like Europe, Asia and America.

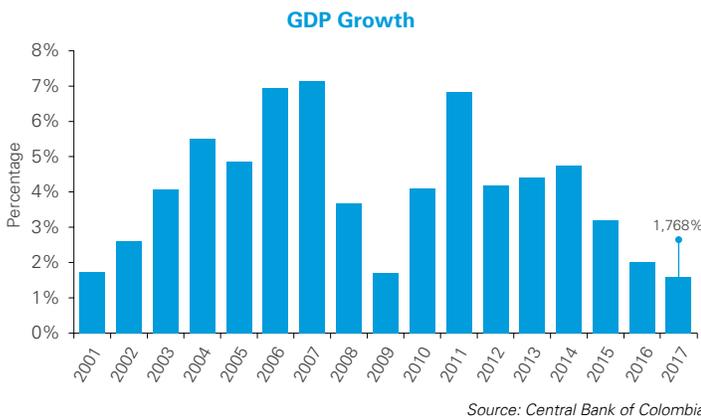


## Business Environment

Over the last decade, Colombia has had a balanced trend in GDP growth.

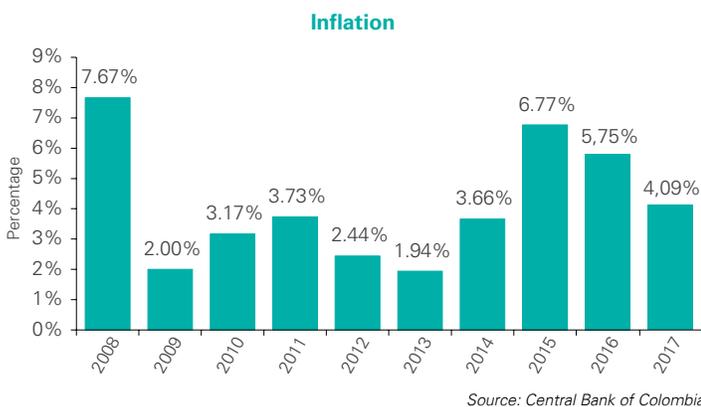
In 2008, the year of the international economic crunch, Colombia had relatively strong economic growth in spite of external conditions. The latter was evident in the figures released by the International Monetary Fund (IMF) for the year 2009, revealing an economic growth of 1.5% for the year. Mostly, the GDP has presented a decrease in 2016 and 2017 due to the falling in mining and construction sectors.

The GDP growth for 2017 reached 1.77%, This growth continues to be above the expected growth for the region (-0.7% for 2017 according to the World Bank).



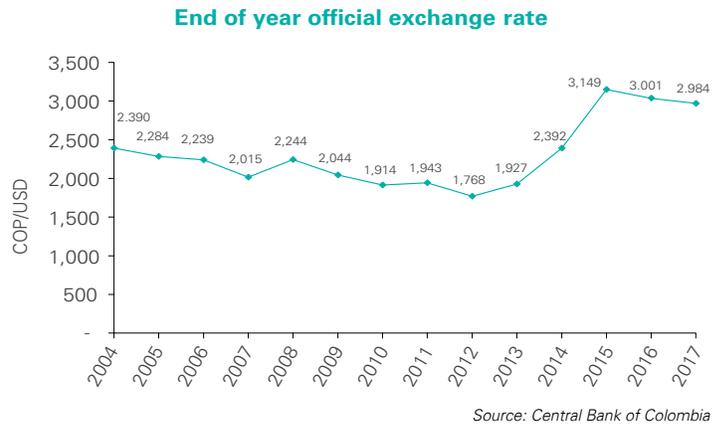
Colombia's Central Bank, fulfilling its constitutional role, has enforced strict monetary policies in order to reduce inflation and control price variations.

Inflation has been under strict control for over a decade, reflecting a one digit, sustainable rate:



Following a strong devaluation in the 90s, the Colombian Peso appreciated against the USD, mainly due to the country's economic recovery.

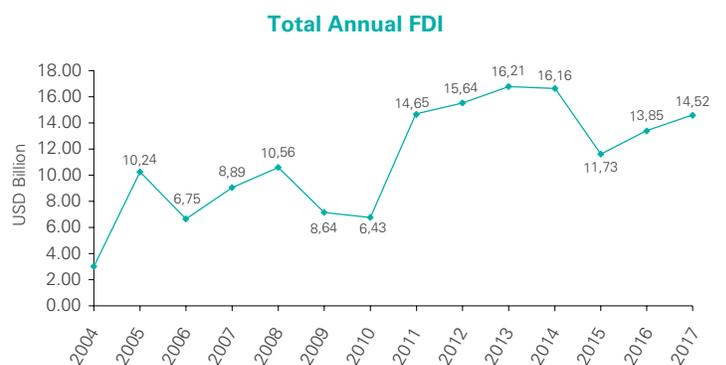
The average exchange rate (representative market rate) for the year 2017 was of 2,951 COP/USD.



Increased confidence in Colombia is reflected on the growing FDI inflows. FDI is currently about 5 times higher than it was at the beginning of the decade.

Most foreign investment is concentrated in transportation services and in the oil sector. Investment in financial services, as well as in the manufacturing and mining sectors, has a great potential for growth in coming years.

FDI inflows to Colombia were USD 14.65 billion in 2011, higher than the figure registered in 2010 of USD 6.43 billion. Nonetheless, 2013 had the highest FDI for the period analyzed, reaching USD 16.21 billion. However, the investment inflows had a decrease in 2015, reaching USD 11.73 billion. Nevertheless, the inflows have presented an increase in the last two years reaching USD 14.52 in 2017.



Ever since 1994, FDI in Colombia has been aimed mostly at the petroleum and transportation sectors followed by manufacturing. The graph FDI by Sector in 2017 indicates the investment participation of the main sectors for the year 2017.

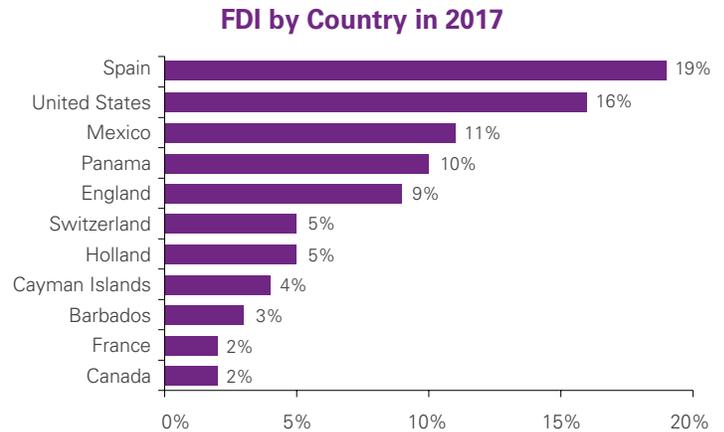
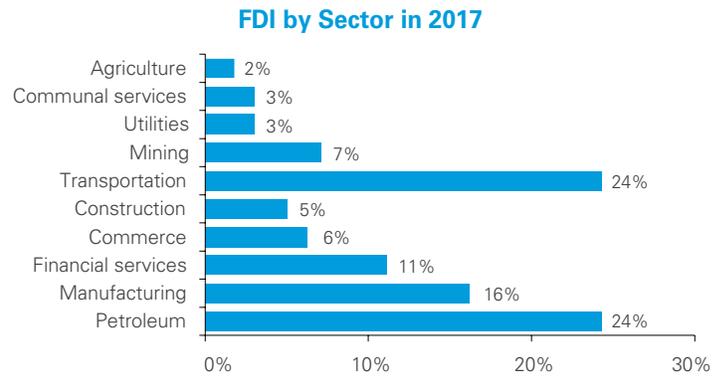
According to FDI by Country in 2017 the main foreign direct investors in Colombia are Canada, United States and Bermuda. The graph below lists the main FDI sources for the year 2017.

The 2017 Doing Business Report ranks Colombia as the 59th best country for doing business, out of 190 countries listed in the report.

Additionally, the same report ranks Colombia as the third Latin American country for the same purpose.

Latin America - Best countries to do business	
Country	World ranking 2017
Mexico	49
Peru	58
<b>Colombia</b>	<b>59</b>
Costa Rica	61
Puerto Rico	64
Jamaica	70
El Salvador	73
Panama	79
St. Lucia	91
Uruguay	94
Guatemala	97
Dominica	98
Republica Dominicana	99
Trinidad y Tobago	102
Antigua y Barbuda	107
Paraguay	108
Honduras	115

Source: Doing Business 2017



Source: Central Bank of Colombia

Exports have increased approximately 225.16% since 2004, rising from about USD 17 billion to USD 38 billion in 2017, generating a trade surplus in recent years.

In 2009, Colombia's trade was affected by political conflicts with some of its commercial partners, resulting in nearly no trade with Venezuela. In spite of these problems, the balance of trade's behavior was positive. However, in the last years, the trade balance has been increasing importantly, after having the biggest decrease by USD 15,907 million in 2015. As of the end of year 2017, the balance of trade was negative by USD 6,177 million, increasing mostly because rise in oil exportations.

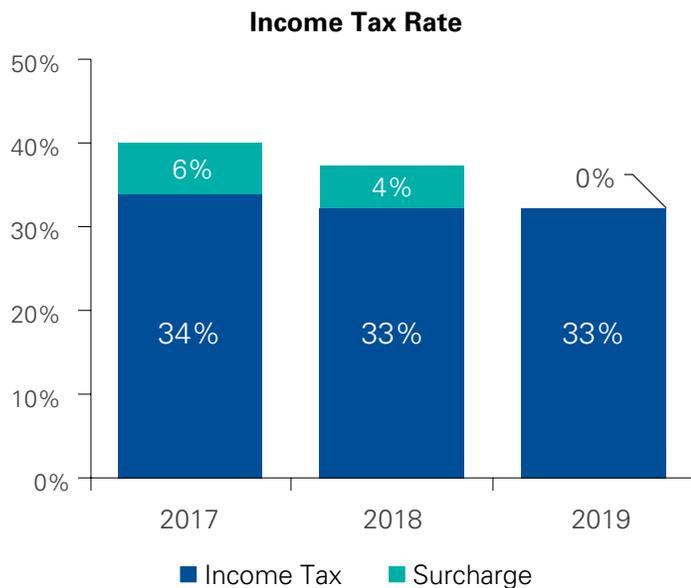


Source: DANE

The income tax payable rate in Colombia is 33% for 2018 and 2019.

Additionally, the government created a surcharge over the income tax rate that will be paid by contributors who have a tax base equal to or greater than COP 800 million (approximately USD 333,000). The latter will have an impact in the total payable income tax rate.

Income Tax Surcharge			
	2017	2018	2019
<b>Surcharge</b>	6%	4%	0%



Source: DANE

In 2011, Colombia was awarded investment grade rating from all the main rating agencies in the world.

### Colombian Sovereign Rating (Foreign Currency, Long-Term)

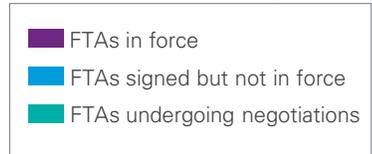
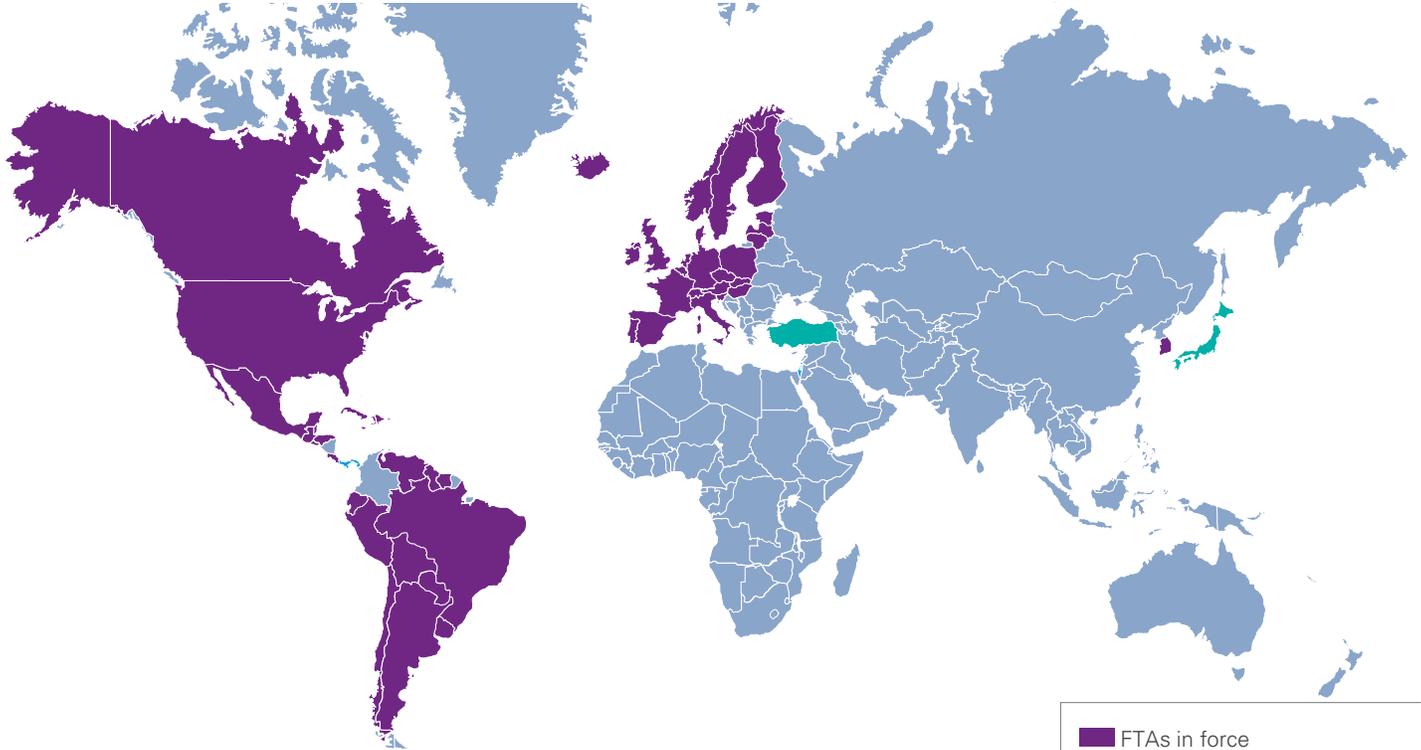
MOODY'S	
Rating	Date
Ba2 (Negative)	27-mar-02
Ba2 (Stable)	9-mar-06
Ba2 (Positive)	25-jun-07
Ba1 (Stable)	19-jun-08
Ba1 (Positive)	9-sep-10
Baa3 (Stable)	31-may-11
Baa3 (Positive)	8-jul-13
Baa2 (Stable)	28-jul-14
Baa2 (Negative)	22-feb-18

FITCH	
Rating	Date
BB (Stable)	3-may-04
BB (Positive)	5-jun-06
BB+ (Stable)	21-jun-07
BB+ (Positive)	14-oct-10
BB+ (Positive)	22-jun-11
BBB (Positive)	6-mar-13
BBB (Stable)	10-dec-13
BBB (Negative)	22-jul-16
BBB (Stable)	20-oct-17

S & P	
Rating	Date
BB (Stable)	14-jul-03
BB (Positive)	22-feb-06
BB+ (Stable)	5-mar-07
BB+ (Positive)	7-jul-10
BBB (Stable)	16-mar-11
BBB (Positive)	15-aug-12
BBB (Stable)	24-apr-13
BBB (Negative)	16-feb-16
BBB- (Stable)	11-dic-17

Source: Ministry of Finance and Public Credit of Colombia

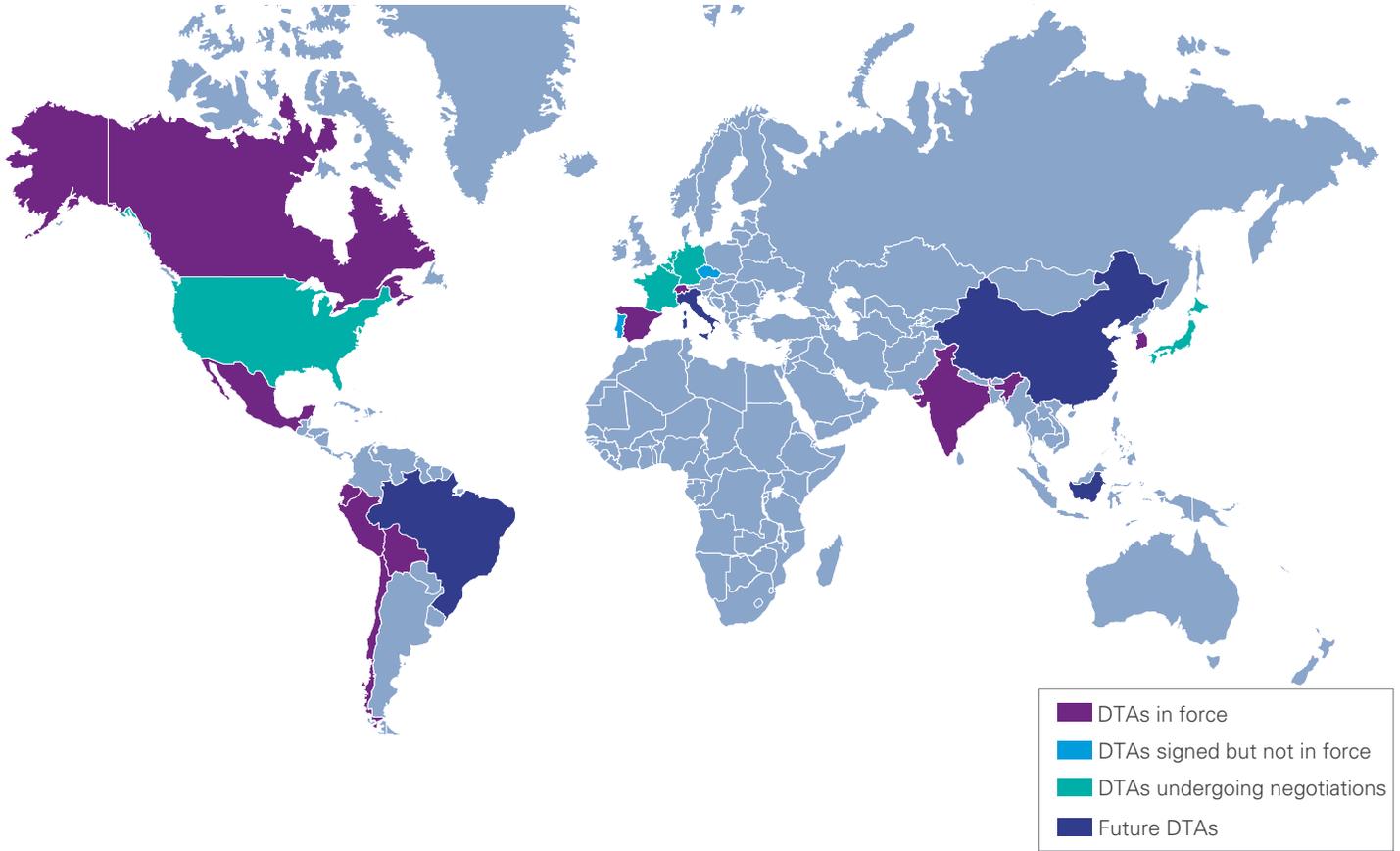
## Free Trade Agreements (FTA)



Source: Ministry of Trade, Industry, and Tourism

In Force					Signed but Not in Force	Undergoing Negotiations
CAN - Ecuador, Peru, and Bolivia	CARICOM (Caribbean Community)	MERCOSUR (since 2005) Argentina, Paraguay, Uruguay, and Brazil	EFTA (Iceland, Liechtenstein, Norway, and Switzerland)	Guatemala, Honduras, and El Salvador	Israel	Turkey
United States	Canada	Chile	G-2 - Mexico	Cuba	Panama	Japan
European Union	Partial reach agreement with Venezuela	Korea	Costa Rica	Pacific Alliance		TiSA-Trade in Services Agreement
						Pacific Alliance/Associated States candidates agreement

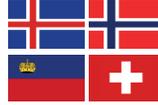
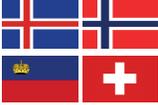
## Double Taxation Agreements (DTA)



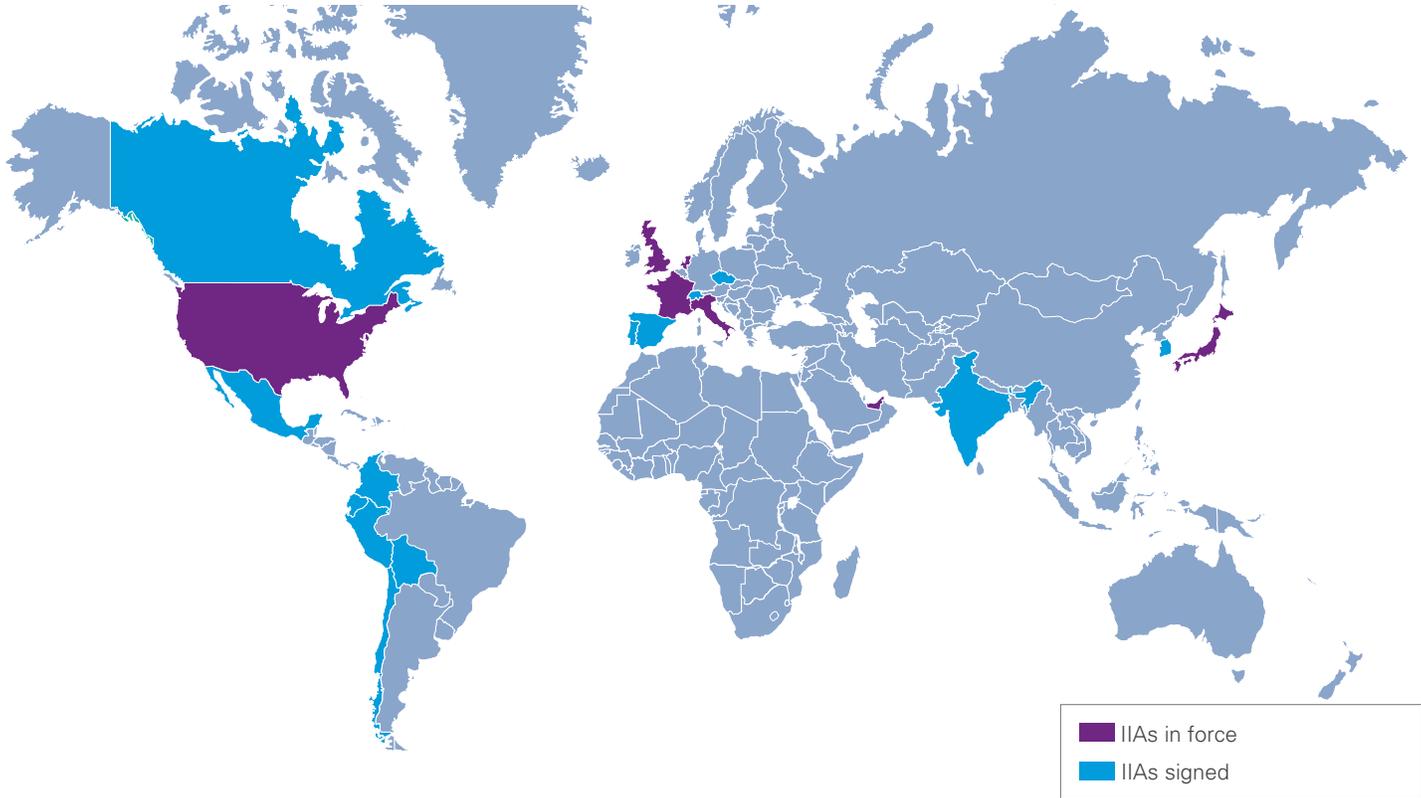
Source: Ministry of Trade, Industry, and Tourism

### DTAs

DTAs are designed to protect investors from double taxation when the same income is taxable in two countries. There are currently:

<b>13</b> In Force							
							
<b>6</b> Signed							

## International Investment Agreements – IIA



Source: Ministry of Trade, Industry, and Tourism

### IIAs

IIAs protect investors from expropriation and discrimination from other national or foreign investors. Additionally, these treaties establish responsive procedures for dispute settlement between investors and the host country. There are currently:

7 In Force							
	United States	Japan	Italy	United Kingdom	France	United Arab Emirates	Netherlands
11 Signed							
	Canada	Chile	Spain	Mexico	India	Czech Republic	Portugal
	South Korea	Switzerland	Andean Community of Nations - CAN	Pacific Alliance			



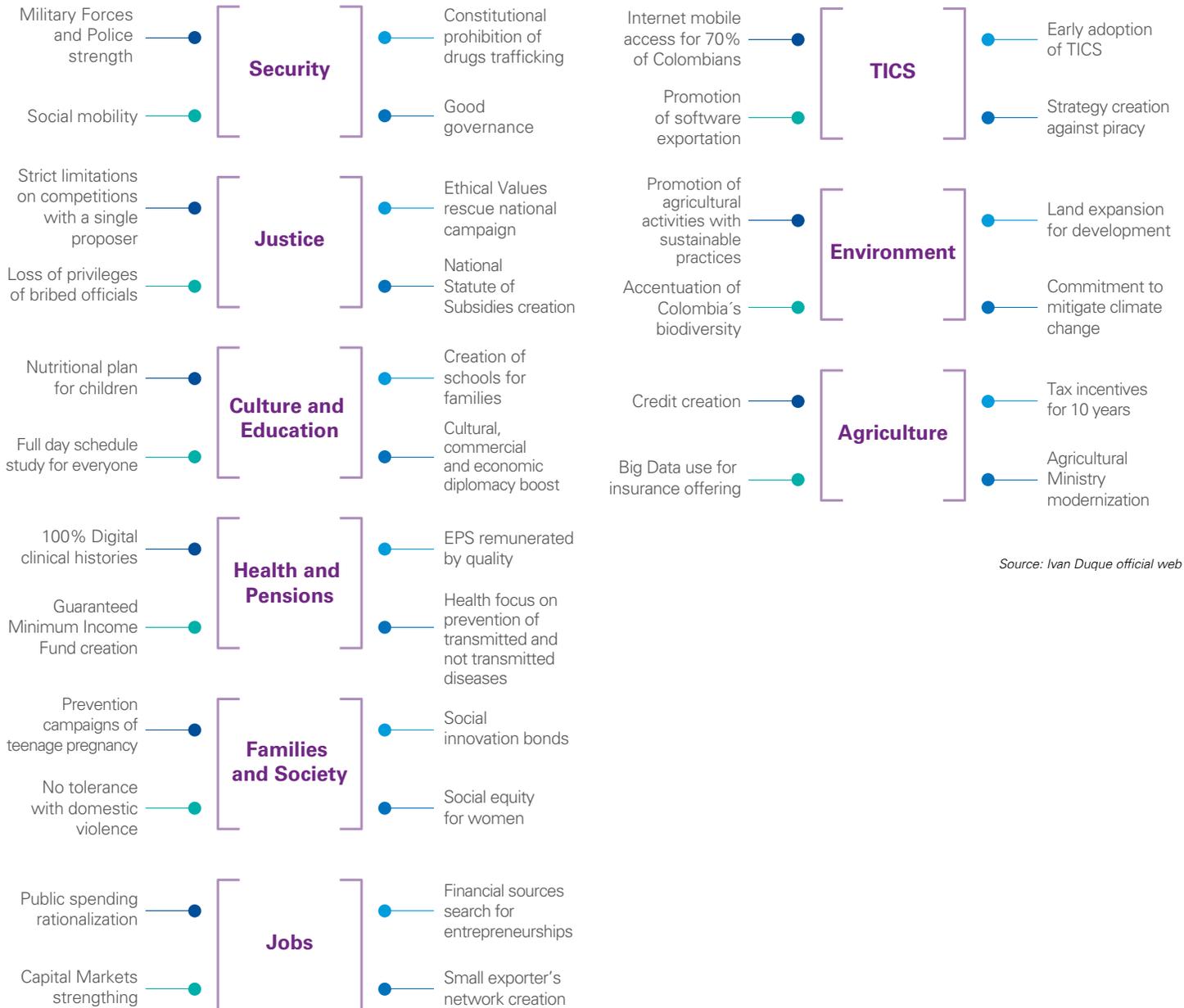
2.

# Background



# Incoming Government Plans for Colombia

The incoming Government Plans are based on Ivan Duque's (current president 2018-2022) proposals. The incoming plans outline 9 categories: security, justice, culture and education, health and pensions, family and society, jobs, TICS, environment and agriculture. Below, some of the main purposes established:

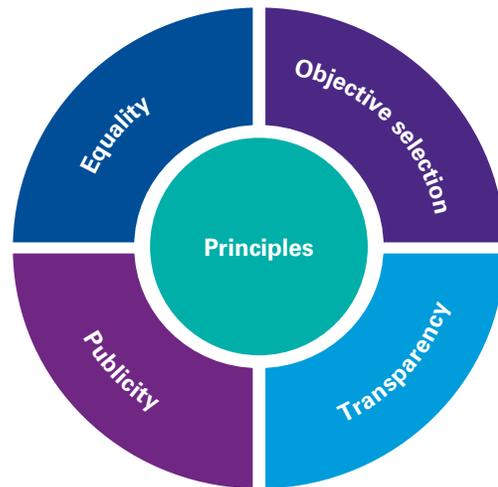


Source: Ivan Duque official web

# Procurement Regime in Colombia

In order to achieve the State's objectives, goods and services must be acquired by public agencies through contracts. Therefore, the object of a contract is no more than the acquisition of goods and services designed to achieve the purposes of the State in a legal, harmonious and effective fashion.

The regulation of pre-contractual and contractual activities in Colombia is contained in the Public Procurement Law (Law No. 80 and Decree No. 1082 of 2015).



## Forms of Selection



### Public Tender

A public tender is a selection process used by government agencies to select contractors through a public invitation addressed to all who are potentially interested in performing the contract. The interested parties, on equal conditions and objective criteria, guaranteed by the Terms of Reference, may present their bids and the most favorable bid will be chosen. In practice, public tenders are reserved for projects of a complex, high-value nature.



### Contests of Merit

This form is suited for the selection of consultancy projects in which systems of open competition or preliminary qualification can be used. If preliminary qualification is used, the list of the qualifying candidates will be formed by a public invitation so that a limited list of offers can be drawn up, using criteria of experience, intellectual capacity, and organization of the proponent, among others.



### Short Process

A short process is a form of objective selection for cases in which the characteristics of the object to be contracted, the circumstances of contracting, or the amount or purpose of the asset, work, or service allow simplified processes to be applied, such as reverse auctions, product exchanges, or mail order purchases in order to guarantee the effectiveness of contractual activities.



### Direct Contracting

The Procurement Law provides the following events where the form applies: i) manifest urgency; ii) contracting loans; iii) with only one possible proponent in the market; iv) for the rental or acquisition of property; v) inter-administrative contracts; vi) for contracting goods and services in the defense sector and for the security and police; vii) for the scientific and technological activities development contracts; viii) escrow agreements made by regional government agencies (Law No. 1150/2007); or ix) for the execution of artistic work or professional support services provision.

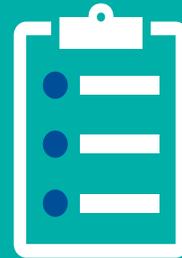
## Transparency Mechanism in the Procurement Regime

Among the strategies used by Colombian Law to boost transparency in their contracting process are:

### Anti-corruption statute – Law No. 1474 of 2011

This statute has 3 cross-cutting themes, which are:

1. Equality in the responsibility of individuals and public servants
2. Increase of disabilities
3. Enhanced controls



### Pact for Transparency

In addition, a Pact for Transparency in the Infrastructure Sector was signed by various governmental entities responsible for promoting and implementing major projects in the country, in order to ensure the proper management of public resources.

The Pact for Transparency has seven main points that must be met by signatories to safeguard the commitment made in the infrastructure sector:

1. Compliance with applicable law in contractual matters.
2. Application of the principles governing the administrative function.
3. Publication of the contractual process on the entities' website.
4. Room presentation and transparent urn.
5. Implementation of standard bidding documents for public works processes.
6. Transparency Pact.
7. Attorney Accompaniment.

### Anti-bribery convention

In addition, Colombia has joined the Organization for Economic Cooperation and Development (OECD) anti-bribery convention.



Source: Ministry of Foreign Affairs

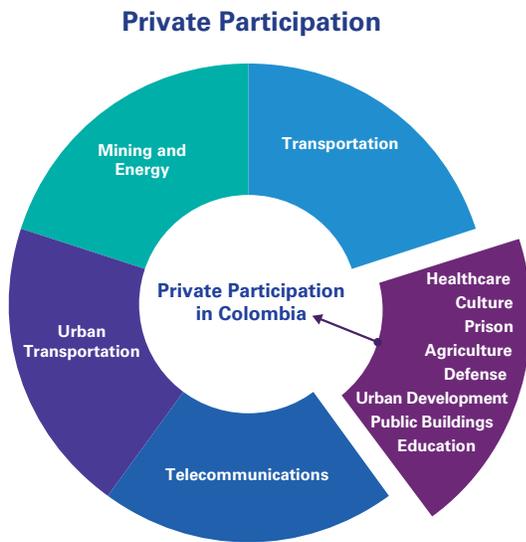
# PPP's in Colombia

## Private Participation in Infrastructure

The process of attracting private participation has an impact on the following sectors:

- **Transportation:** construction, operation, and maintenance of part of the public transportation infrastructure.
- **Telecommunications:** developing the mobile communications service, opening the long-distance market, and improving the television offer through open and closed TV concessions.
- **Mining and energy:** service improvement and supply assurance in the long-term through the sale of assets in the sector and the entrance of private operators.
- **Urban transportation:** development of efficient transportation systems.

The goal is to attract private investment to new sectors (healthcare, education, prisons, defense, agriculture, urban development, culture, and public buildings).



Prior to the PPP Law, all infrastructure projects in Colombia were made under Law No. 80 of 1993:

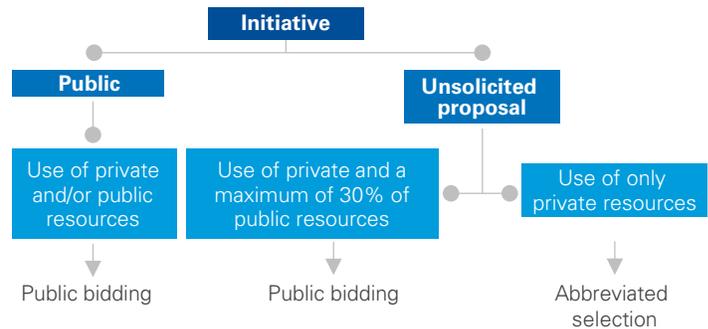
- The PPP Law is overruled by Law No. 1, which regulates port terminals.
- The PPP Law is overruled by the Mining Law, which regulates mining activities.

There are two kinds of PPPs:

**Public initiative:** for the selection of PPP projects from public initiatives, the prequalification system may be used in accordance with the rules, a list of pre-qualified bidders will be made via a public invitation.

**Unsolicited proposal:** the PPPs from a unsolicited proposal are divided in two kinds: projects that require public funding and those that do not.

- **Unsolicited proposal that do not require expenditure of public funds:** individuals can structure public infrastructure projects or provide associated services, at their own risk, assuming all costs of structuring and presenting it confidentially to the entity. There are pre-feasibility and feasibility stages.
- **Unsolicited proposal that require outlays of public funds:** this kind has the same stages and additionally a public bid where, if an agreement is achieved between the corresponding public agency and the originator of the initiatives, the public entity will hold a public bid to select the contractor.



## Characteristics

- **Proper structuring** The law reinforces the proper structuring of projects with regards to technical studies and risk analysis, and it includes the concept of value for money.
- **Budgetary Treatment** The law contains changes in the budgetary treatment regarding future provisions for PPP national and territorial projects.
- **All sectors** The law applies to all sectors in which the services for provision of infrastructure are needed.
- **Capacity and Commitment** The goal is to attract long term investors who will operate and maintain the infrastructure and not only the construction.
- **Payment** Introduces the concept of payment for availability and level of service.

Source: DNP

## Legal and Regulatory Framework of the PPP Law

PPP Key features	General provisions
<ul style="list-style-type: none"> <li>• Project funds are managed through an SPV.</li> <li>• Creation of a new database of PPP projects (Single Record of Public Private Partnerships or RUAPP, for its Spanish acronym).</li> <li>• Proper budget management to guarantee future payments.</li> <li>• A sub-commission to monitor the rules of the PPP Law is created.</li> </ul>	<ul style="list-style-type: none"> <li>• The law applies to all sectors – minimum project investment: USD 1.4 million (equivalent to 6,000 minimum monthly wages in Colombia).</li> <li>• Maximum term including extensions is 30 years (the term can be extended only if there is a previous favorable concept from CONPES – National Council of Economic and Social Politics).</li> <li>• Limit to additions and extensions of contracts with public budget is 30%.</li> <li>• Nation's payments subject to service availability.</li> </ul>

PPP's Conditions	
General implications of a public initiative process:	
<p>Selection procedure: public tender, referred to in Article No. 30 of Law No. 80 of 1993 and 1508 and their regulations.</p>	<p>The Mixed Economy Companies, their subsidiaries, the domiciliary public utility companies and the Industrial and Commercial Companies of the State or their assimilated companies may be contractors of PPP schemes. Nevertheless, excluded entities can submit offer to participate in the selection processes under public private association schemes (Law 1882, 2018).</p>
<p>Contract value: the value of the contracts of PPP projects of public initiative includes the estimated investment budget which corresponds to the construction, repair, improvement, equipment, operation, and maintenance of the project as appropriate. The value of the properties in which the properties are located, on which real rights may be recognized, may not exceed 30% of the estimated budget of the investment of the project.</p>	<p>Selection factors: the corresponding government entity will verify that the requirements and conditions have been met to determine if the bidders may continue in the selection process. The best offer for the entity is that which, according to the nature of the contract, represents the best offer based on the application of the criteria set out in paragraph 12.2 of Article No. 12 of Law No. 1508 of 2012 or in the best cost-benefit for the entity. The analysis to establish the best cost-benefit outcome for the Company will take into account minimum and additional technical and economic aspects that the bidder must meet.</p>
General implications of a public initiative process:	
<p>Studies to open a selection process for project implementation: the corresponding government entity must have the required studies. However, if due to the nature and scope of the project some of the studies are not required, the government entity will determine which studies are needed to open the corresponding selection process.</p>	<p>Prequalification systems: for projects whose estimated cost is more than 70,000 minimum monthly wages (USD 19 million)*, the corresponding government entity might use prequalification systems prior to opening the selection process in order to use private sector expertise to improve the definition of conditions for project implementation.</p>

\*TRM COP 2,951.32 (Average 2017 TRM). Minimum monthly wage= COP 781,242

Source: DNP



## **Public Private Partnerships in Colombia (PPPs) – Law No. 1508 of 2012**

The law is enforceable in all contracts where the private investor undertakes any of the following activities:

1. Design and construction of infrastructure and its utilities.
2. Infrastructure construction, repair, improvement, or equipment (these activities must involve the operation and maintenance of the infrastructure).
3. Infrastructure for public services.

## **Public Private Partnerships in Colombia (PPPs) – Law No. 1882 of 2018**

The law is enforceable in modification and addition to Public Private Partnerships in Colombia (PPPs) – Law No. 1508 of 2012 for the reinforcement of the public recruitment process in Colombia.

1. The auditors of PPP's contracts, studies and private project evaluations should be hired through the minimum amount abbreviated selection procedure. The auditors must be recruitment with a person external to contracting and contractor entities.
2. With PPP's projects, real state rights should be recognized by the competent state entity. This real state will be attributed as the retribution component if it is not required for the project operation.
3. Mixed economy societies, its subsidiaries, domiciliary public services companies and state industrial and commercial companies (or similar) cant be PPP's scheme contractors.
4. For the contractors selection process a previous rating system should be implemented according to the stablished regulations. For this, a previous list of participants should be conformed by public call.
5. Future funds issued should follow prevailing standards. When future fund in charge of the districts, or special category municipalities or its decentralized entities, they can be approved at the government last year execution and for the term of project duration.
6. For PPP's contracts, a clause of reciprocate benefits formulation for the participants will be included in case of anticipated termination by mutual agreement or unilateral decision.

*Source: DNP*

**Prequalification:** the invitation to participate in the prequalification includes the following information, at the least:

1. Project description and feasibility studies that support the project.
2. Deadline and physical location or address to submit the expression of interest.
3. Show the minimum enabling requirements that are required for prequalification.

**Creation of the prequalified list:** comprises at least 4 potential bidders and will be published in the SECOP. If there are 2 to 3 potential bidders who meet the enabling requirements, the creation of the prequalified list will be optional.

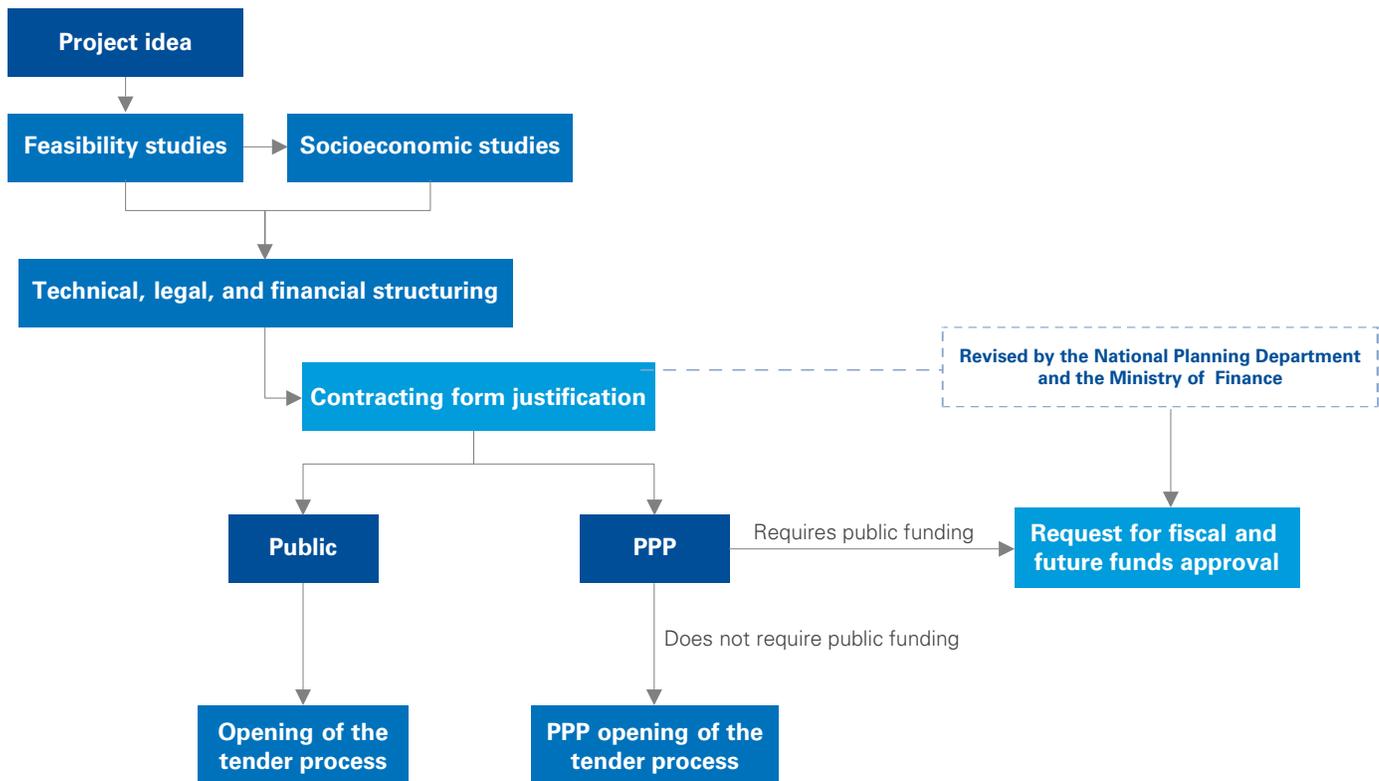
**Prefeasibility stage requirements:**

- Project name and description
- Project scope
- Project design
- Project specification
- Estimated cost
- Sources of financing

**Feasibility stage requirements:**

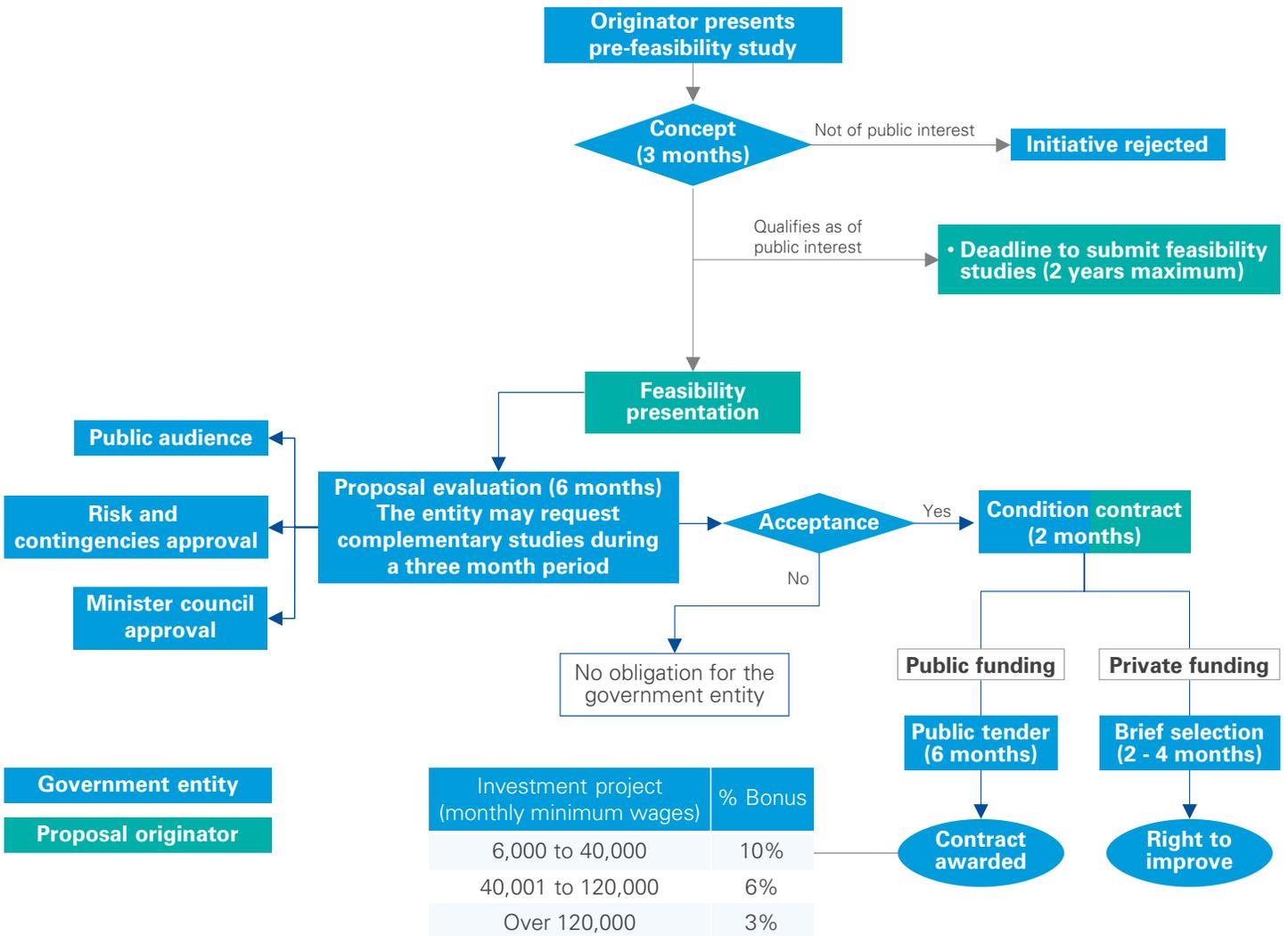
- Project originator
- Project
- Project risk
- Financial analysis
- Updated studies
- Draft contract

**Public Initiative**



Source: DNP

## Unsolicited Proposal



Source: DNP

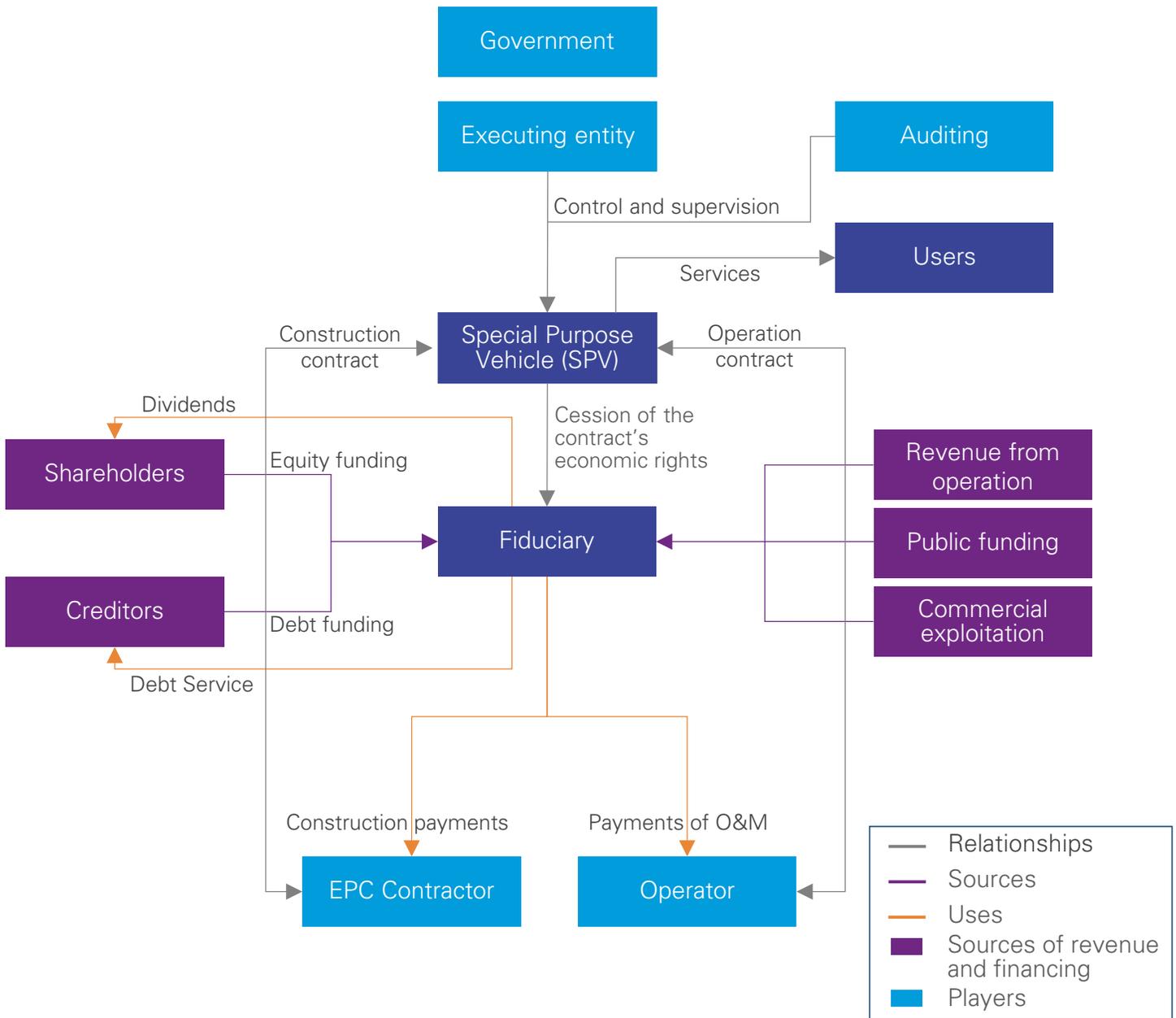
## General implications of a unsolicited proposal process

It is not possible to present unsolicited proposals:

- Where there is a modification of a current concession contract.
- If there is a request for state guarantees or public funds superior to the limit established by the Law 1508.

- For projects in which the public entity has perform the structuring process and, therefore, the public entity:
  - Has the prefeasibility and feasibility studies.
  - Has presented the final Request for Proposals, in case the project investment is superior to 500,000 monthly minimum wages\*.
  - Has hired the technical, legal and financial structuring of the project or if the private entity is currently in the process of hiring it.

\*Colombia 2018 minimum wage: USD 262 (COP 781,242).



Source: DNP

A standard transaction structure is shown in the figure. A transaction will involve a set of players (both public and private)

who will have different relationships between each other. The transaction will also involve the sources and uses of the project.

## INFRASCOPE 2018

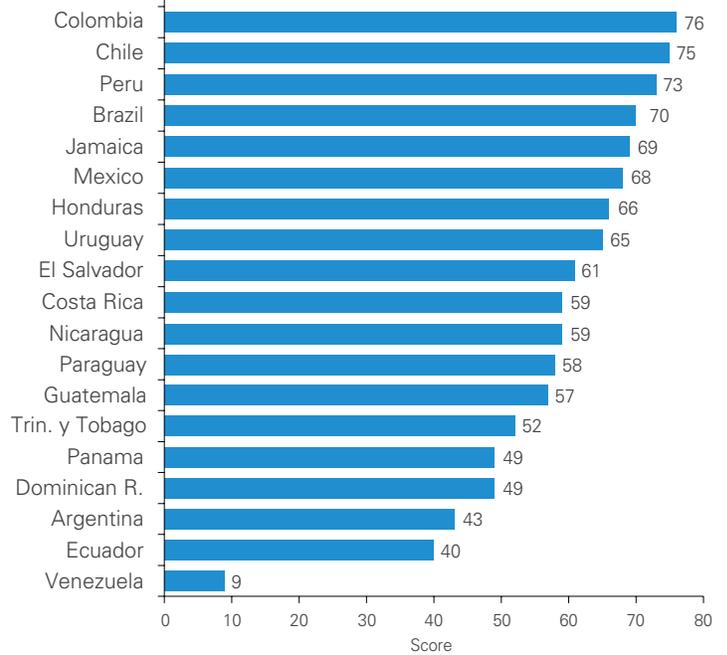
Infrascope is the PPP's environment evaluation in Latin America. It is developed every year by The Economist Intelligence Unit and financed by BID.

It evaluates a 23 indicators scheme, including social sustainability, environmental sustainability, process transparency, among others.

Colombia has the first place according to its capacity for developing PPP's since PPP's law was released:



## PPP's development capacity



Colombia obtained the 6th place over countries that were able to introduce their relevant PPP's project into the National Development Plan.

## Risk in Infrastructure projects in Colombia

According to CONPES No. 3107 and No. 3133 of 2001, in a contractual scheme involving the participation of the private sector, several risks can be identified and grouped into 8 main categories: i) technological, economic, social or political, operational, financial, regulatory, environmental, and nature-related risks.

The document states that these risks must be assigned to the party which i) is in a better position to assess, control, and manage them and ii) has the best access to mechanisms to mitigate those risks.



Source: CONPES No. 3107 and No. 3133 of 2001

## Public Private Comparator and Risk Analysis Methodology

The process of risk identification, valuation, assignment, and mitigation becomes mandatory for all new projects that are developed in Colombia under a PPP scheme. For this purpose, the Ministry of Finance has developed a methodology to assess the risks of infrastructure projects (Methodologies for Assessing Contingent Liabilities) in Colombia. The steps to perform the methodology are the following.

Additionally, Colombia has a Contingency Fund for State Entities that functions as a coverage mechanism in the event of a contingency. This fund manages the resources transferred by government entities that have contingent liabilities. Those contingent liabilities arise from the contracts for infrastructure under the concession scheme or subscription of public credit operations guaranteed by the Nation. These contributions are given in the amounts and periods calculated with the Methodologies for Assessing Contingent Liabilities. The fund is administrated by La Previsora S.A.

**1 Identification – pre-assignment**  
The factors that represent a potential significant threat must be identified.

**2 Evaluation - qualification**  
The identified risks must be qualified.

**3 Assessment**  
i) The probability and ii) the level of monetary impact of the identified risks must be estimated.

**4 Mitigation**  
Mechanisms must be used to mitigate the risks and to assign them to the player who is better prepared to retain them.



Additionally, Colombia has a Contingency Fund for State Entities that functions as a coverage mechanism in the event of a contingency. This fund manages the resources transferred by government entities that have contingent liabilities. Those contingent liabilities arise from the contracts for infrastructure under the concession scheme or subscription of public credit operations guaranteed by the Nation. These contributions are given in the amounts and periods calculated with the Methodologies for Assessing Contingent Liabilities. The fund is administrated by La Previsora S.A.



The Public Private Comparator (PPC) plays a key role in Colombia in the development of infrastructure projects, given that according to Resolution No. 3656 of 2012 it is one of the methodologies defined by DNP to justify the use of PPP's mechanism.



According to Resolution No. 3656 of 2012, the PPC is defined as “a methodology to compare the costs for the public sector, adjusted for risk levels, to implement a project in the form of a public project against the costs for the public sector, adjusted for risk levels, if the project is developed under the PPP modality.”

Source: DNP and the Ministry of Finance and Public Credit

# Financial Market in Colombia

## How is Infrastructure Financed in Colombia?

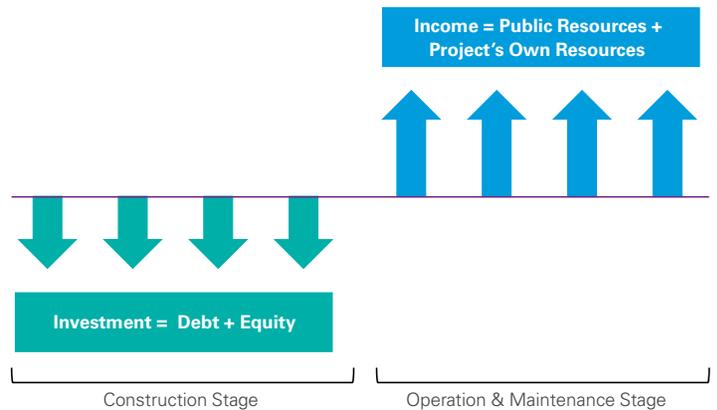
There are various financing sources available in Colombia, which include:



Some of the financing sources, such as international banks, multilateral entities, and international corporations/funds can provide financing in dollars. Traditionally, in Colombia, the main mechanism for private participation in infrastructure projects has been through concession contracts.

In Colombia, the range of application of PPP schemes involves various sectors, ranging from productive infrastructure (transport, electricity, and water supply) to social infrastructure (education and health), excluding telecommunications, mining, and port terminals. In addition to the various sectors, PPPs can be developed through numerous variations and different contractual arrangements that include contracts for operation and maintenance, concessions, and more complex schemes which incorporate various degrees of responsibility for those who provide the operation and maintenance of the goods and/or services.

For this kind of projects, in general terms, the concessionaire finances the construction stage with debt and equity, while the operation stage is financed through the project's own resources plus government payments (future funds), if necessary. This can be seen in the following graph:



Source: Ministry of Credit and Public Finance



## Multilateral Development Banks

The government is seeking the interest of several MDBs due to their expertise in the projects that will be developed. Among the possible MDBs there are:

- IDB– Inter-American Development Bank
- WB – World Bank
- CAF – Latin American Development Bank
- IFC – International Financial Corporation
- BNDES – Banco Nacional de Desenvolvimento Economico e Social (Brazil)
- IDFC – Infrastructure Finance Company (India)
- China Development Bank (China)
- Fondo Nacional de Infraestructura (Mexico)

The most common credit mechanisms offered by MDBs is presented below.



## Local Banks

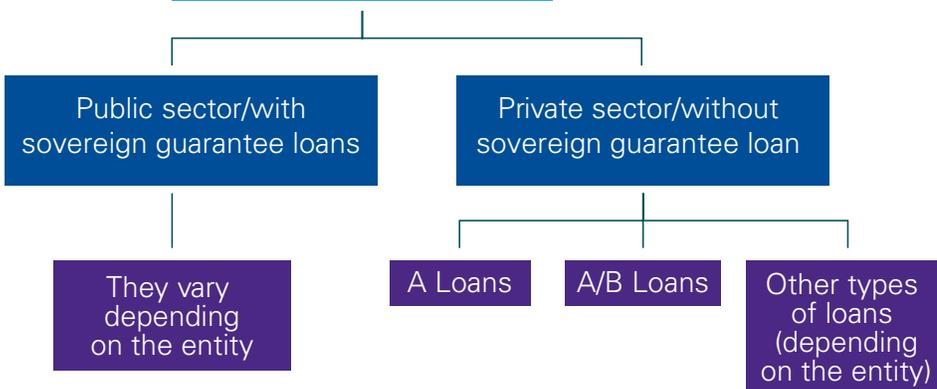
In terms of infrastructure finance, local banks offer the following advantages, among others:

- Banks are more accustomed to the risks involved in an infrastructure project (i.e. Construction risks). Banks are accustomed to provide lending based on the balance sheet of the entity requesting it and not on the project on which it will be used.
- Banks have, among their financial models, various mechanisms for identifying associated risks in early stages of the projects.
- In the case a project requires changes to its financing structure, banks present simpler and more efficient mechanisms for the renegotiation of loans when compared to other sources of financing.
- Local banks have a wider knowledge of the players involved in infrastructure projects, since several of the consortium members are already clients of the local bank system.

The level of debt currently required for financing new infrastructure projects is relatively large when compared to the Colombian financial market, which is why the government is seeking the participation of international players such as Multilateral Development Banks (MDBs), private equity funds, and international banks.

The primary financial groups in Colombia are Bancolombia Group, Aval Group, Davivienda Group, Itau, Banco Agrario and Scotiabank Colpatría.

### MDBs credit mechanisms



Source: Ministry of Credit and Public Finance



## International Banks

In recent years, there has been a growing interest from international banks in infrastructure projects in Colombia. Currently, the main banks involved in this process are Caixa bank, Brazilian Itau Bank, Sumitomo Mitsui, Cabeil, IDB, BCP, Spanish ICO and Korean KDB, among others. This kind of entities have the following features:

- Limited experience in local project finance.
- NY law and documentation.
- They offer financing options in various currencies.
- Due to their strength in assets and equity, they have a greater financing capacity than Colombian companies.

Recent devaluation of the Colombian peso in comparison with the US dollar will probably make an acquisition of debt in this denomination unattractive for project generators.

## 4G Experience

For current 4G projects which have achieved financial close, local banks have offered annual interest rates ranging from Colombian CPI + 6% up to Colombian CPI + 7.5%.

The National Development Bank (FDN) and local banks stand out as the entities that have the most credit contracts for 4G.

According to the estimates of the National Agency of Infrastructure (ANI), it is expected that in the next financial closings will have a participation of the local bank of 33%, of the international bank 25% and of the National Development Bank 16%.

Since May 24<sup>th</sup> of 2017, international banks can access to FDN direct credits, taking by themselves the credit risk.

The annual interest rates for current 4G projects with financial close are located between LIBOR + 2.5% and LIBOR + 3.25%.

Source: Ministry of Credit and Public Finance



## Capital Markets Financing

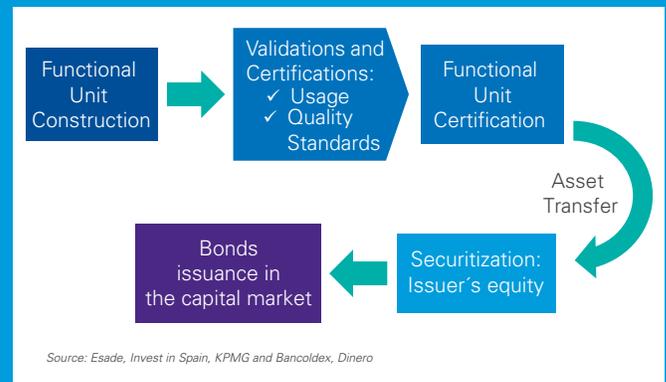
Some of the ways to finance infrastructure projects within the capital market are:

- Ordinary bonds indexed to inflation
- Bonds indexed to USD or UVR (Real Value Units)
- Treasury bonds
- Bonds with sovereign guarantee
- BOCEAS issuance
- Stocks issuance
- Corporate bonds

By October of 2017, the first corporate bonds were issued by Odinsa, one of the biggest companies from the infrastructure sector. This bonds are around USD 136 million with different yields, and are a sample of flexible and creative funding sources searching.

## 4G Experience

For the current 4G projects which have achieved financial close, there have been bond issuances for approximately USD 810 million. This shows the appearance of this kind of financing as an alternative to traditional sources such as banking. Currently issued bonds offer annual rates between 6.8% and 8%.



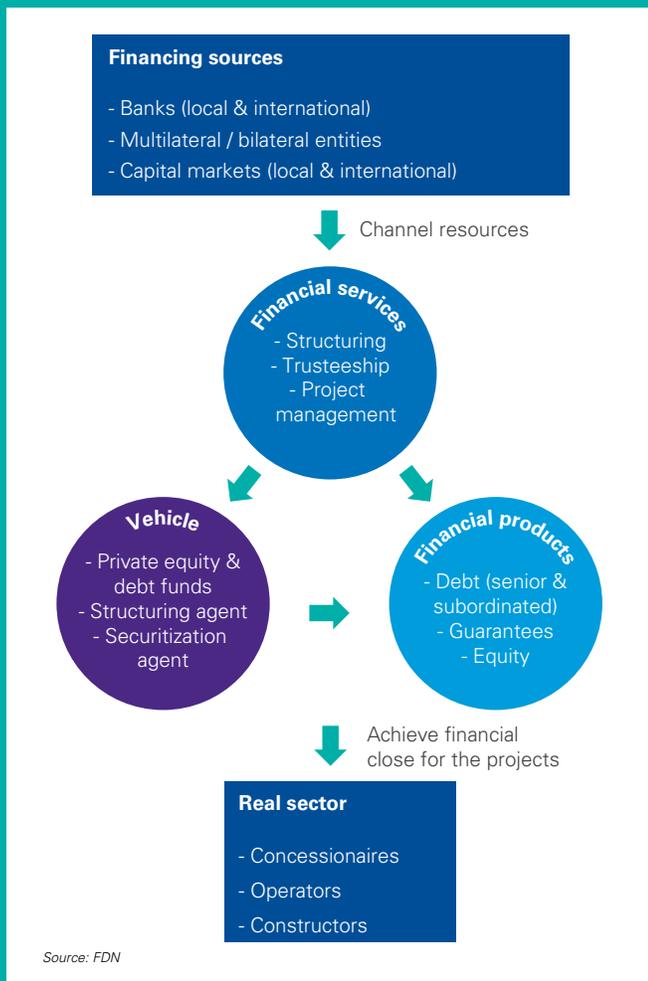
Source: Esade, Invest in Spain, KPMG and Bancoldex, Dinero

Source: Esade, Invest in Spain, KPMG and Bancoldex, Dinero



## Financiera de Desarrollo Nacional - FDN

The FDN (National Development Bank) is a mixed economy society, linked to the Ministry of Finance and Public Credit and supervised by the Superintendencia Financiera de Colombia. Its objective is to manage and stimulate the financing and structuring of infrastructure projects in Colombia. It has MDBs as partners with a participation of 30%, while the remaining 70% belongs to the government. The government allows the FDN to grant financing and guarantees over the limits that other credit establishments have, as long as they are not financed with public resources. The following graph shows the ways in which the FDN intervenes:



## 4G Experience

- Provide and mobilize resources to address the needs of infrastructure projects that have a unique set of risks.
- Advise, structure, and contract management to help public sector clients build a pipeline of new infrastructure projects.
- Give financial direct credits to International banks, with the objective of providing an acceleration to projects financial closing.

FDN also plays a dynamic role in promoting financial regulatory changes in order to develop the funding and capital markets as well as enhancing the capacity in the industry and government and standardizing project finance practices.

The FonDes is established with the money raised from the sale of ISAGEN (one of Colombia's greatest electricity generation and distribution companies) and divide into two parts: One administrated by National Institute of Cooperation (FonDes Inacoop); and other administrated by National Development Agency (FonDes ANDE). This fund helps reducing the funding cost of projects as well of ease the way for a more efficient use of public resources through prioritization of investment projects.

Source: Ministry of Credit and Public Finance



## Mutual Funds

In order to stimulate the investment from severance and pension funds in infrastructure projects under a PPP scheme, the investment regime in local private equity funds applicable to some of the portfolios (moderate, major risk, and long term) was added, through Decree No. 816 from April 18, 2014. The objective was to allocate a part of their investors' contributions to this kind of projects.

Additionally, investments in local private equity funds may be included in life insurance companies' technical reserves, as long as this investment is destined to financing PPP projects. Law No. 1385 from 2015 also stimulates the participation of insurance and pension funds in 4G project financing.

The main types of private equity funds that invest in infrastructure include:

- Private equity funds that serve as intermediaries for institutional investors.
- Pension funds.
- Insurance companies.
- University endowments.
- Family offices.

This type of funds commonly seek not only finance infrastructure projects but also to be included as part of the project's equity through mezzanine credits.

According to Private Equity Funds National Association (ColCapital) announced an incremental rate in the amount of private equity funds, going from 2 by 2005 and reaching 105 by 2017 with an incremental rate of 24.4%. Until June of 2017, the biggest investments in Colombia were from infrastructure private equity funds, approximately by USD 4,950 million.

On the other hand, there are sovereign funds which can invest in infrastructure and infrastructure funds which are private equity funds specifically focused on infrastructure investment.

In addition, SK Group along with Corficolombiana joined efforts to create the CFC-SK El Dorado Latam LP private fund. Currently, the capital commitment is USD 100 million. The Colombia Senior Debt Fund have as a priority to invest in 4G infrastructure projects, while the CFC-SK El Dorado Latam, LP invest in transport, infrastructure, and energy.

Also, since 2017 the Spanish bank Renta 4 Banco is involved with a trust company in Colombia. Renta 4 has expressed its interest in investing in infrastructure projects in Colombia, particularly the 4G road projects.

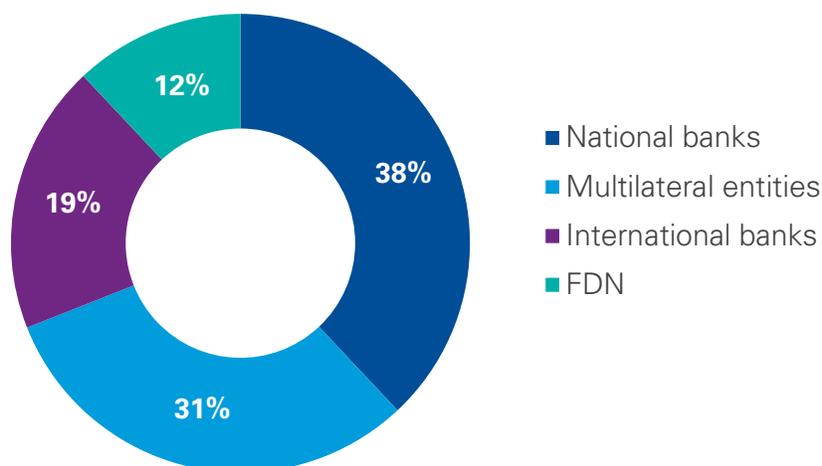


## 4G Projects with Financial Close

Project	Financial Close Date	Financing Sources CD	Financing Conditions
Ruta del Cacao (Bucaramanga - Yondo)	26/10/2018	[A] FDN- USD 129.32 million [B] IDB- USD 87.43 million [C] Banks (Bancolombia, BBVA) and Fonds (BlackRock, Union para la Infraestructura)- USD 346 million	Conditions not disclosed yet
Transversal del Sisga	21/05/2018	[A] FDN- USD 77 million [B] ICO- USD 31.250 million [C] Ashmore-Caf y de Blackrock- USD - 91.4 million	Conditions not disclosed yet
Girardot- Ibague- Cajamarca	10/04/2018	[A] Local Banks (Davivienda, Aval Group)- USD 10 million [B] APP Gica- USD 426 million approx.	Conditions not disclosed yet
Chirajara - Villavicencio	2/02/2018	[A] FDN- USD 136 milion [B] National Banks - USD 271 milion [C] FCP 4G (Credicorp Capital, Sura Asset Management) - USD 136 milion	[A] 10 years Mini Perm credit [B] 10 years credit [C] 20 yeas credit
Villavicencio- Yopal	19/12/2017	[A] Aval Group - USD 550 million	[A] 10 years credit
Antioquia- Bolivar	14/12/2017	[A] FDN- USD 136 milion [B] UVR indexed bonds- USD 176 million [C] Local Banks- USD 95 milion [D] Ashmore CAF- USD 93 million	[A] 26 years in 6.75% coupon for UVR bonds
Vias del Nus	7/03/2017	[A] FDN- USD 106 millions [B] Banks (Bancolombia)- USD 134 millions	Conditions not disclosed yet
Autopista al mar 1	26/10/2016	[A] Sumitomo Mitsui Corporation- USD 484 million	Conditions not disclosed yet
Neiva- Espinal- Girardot	22/09/2016	[A] Bancolombia & FCP 4G Credicorp Capital - Sura Asset Management- USD 279 milion	Conditions not disclosed yet
Alto Magdalena	12/09/2016	[A] COP Ican (Bogota, Occidente, Av Villas, Popular) USD 245 milion [B] USD Ican (Banco Centroamericano de Integracion Economica -BCIE) - USD 146 milion	Conditions not disclosed yet
Conexion Pacifico 2	7/09/2016	[A] National banks (Banco de Bogota & Davivienda) USD 183 milion [B] International banks (Itau, Banco de Credito del Peru) - USD 269 milion	Conditions not disclosed yet

Project	Financial Close Date	Financing Sources CD	Financing Conditions
Conexion Norte	1/08/2016	[A] National banks (Bancolombia & Davivienda) USD 94 million [B] IFDN - USD 94 million [C] International banks (Sumitomo Mitau) USD 269 million	Conditions not disclosed yet
Barranquilla- Cartagena	8/07/2016	[A] USD indexed bonds -USD 154 million [B] UVR indexed bonds- USD 112 million [C] FDN - USD 74 million	[A] 7% annual rate for USD bonds [B] 6.8% annual rate for UVR bonds
Conexion Pacifico 1	9/06/2016	[A] National banks (Grupo Aval & Davivienda) USD 716 million [B] International banks (Credit Agricole, Mizuho, Ccaixabank & Sumitomo Mitau) - USD 153 milion	[A] In COP, annual interest rate of Colombian IPC + 7% during construction, Colombian CPI + 6% during O&M [B] In USD, annual rate of LIBOR + 2.5% during construction, between LIBOR + 2.75% and LIBOR + 3.25% during O&M
Perimetral de Oriente	25/05/2016	[A] National banks (Bancolombia & Corpbanca) USD 307 million [B] FDN - USD 54 million [C] IDB - USD 157 milion	Average interest rate: Colombian CPI + 7.5% - detailed conditions not disclosed yet
Conexion Pacifico 3	19/02/2016	[A] USD indexed bonds- USD 266 million [B] UVR indexed bonds- USD 102 million [C] Banks - USD 300 milion (Bancolombia, Itau, Credicorp pf und)	[A] 8.0% annual rate for USD bonds [B] 7.5% annual rate for UVR bonds [C] 12- year bank loans with 5 year of grace, with an annual interest rate of Colombian CPI + 7.4% during construction and CPI + 7.09% during O&M

### Current 4G Project Financing



Source: WRadio

3.

# Infrastructure Sectors



# 3.1. Transport Infrastructure

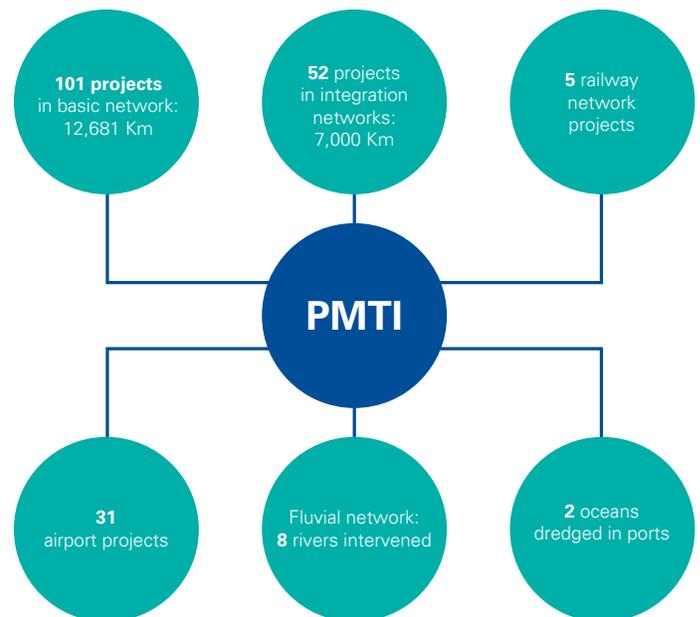
## Transport Generalities

Colombia developed the 20 years Intermodal Transportation Master Plan (PMTI) in order to achieve the mid-term and long term objectives.

The hypothesis of the PMTI are the following:

1. In 2022 Colombia will have a complete primary road network.
2. The fluvial and rail forms of transportation will supplement the road network.
3. Find a solution to critical points in urban access, ports, airports and international border crossing points.
4. Strengthen institutions in order to solve the lack of paved streets and regional accessibility.

The government expects the private sector to be actively involved in the plan in various aspects. The PMTI involves the following projects:





Annual investment for the first decade:  
**USD 3,899 million**

**PMTI investment by component**

(Values in USD million)	Component	First decade	Second decade
Basic network	Fluvial	1.333	454
	Rail	1.528	2.236
	Ports	238	238
	Airports	5.860	421
	<b>Roads</b>		
	Maintenance	7.872	14.667
	Saturation reduction	10.904	5.383
Specification improvement	4.854	1.841	
	<b>Basic network total</b>	<b>32.589</b>	<b>25.240</b>
Integration network	Fluvial	-	804
	<b>Roads</b>		
	Maintenance	-	2.604
	Projects	6.404	10.018
	<b>Integration network total</b>	<b>6.404</b>	<b>13.426</b>
<b>Total investment</b>		<b>38.994</b>	<b>38.666</b>

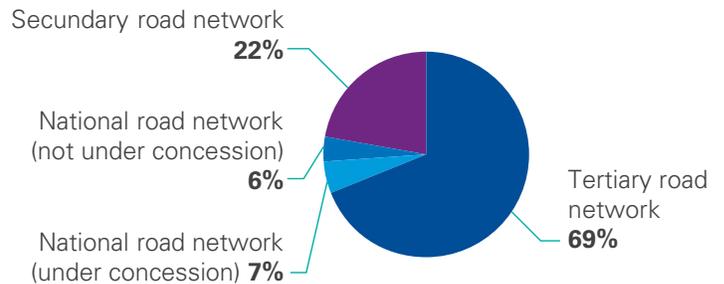
Source: Intermodal Transportation Master Plan

# A. Roads

## Overview

Road and highway concessions are grouped into four categories: (1) national road network not under concession (8,924 Km); (2) national road network under concession (10,155 Km); (3) secondary road network (45,137 Km); and (4) tertiary road network (142,284 Km).

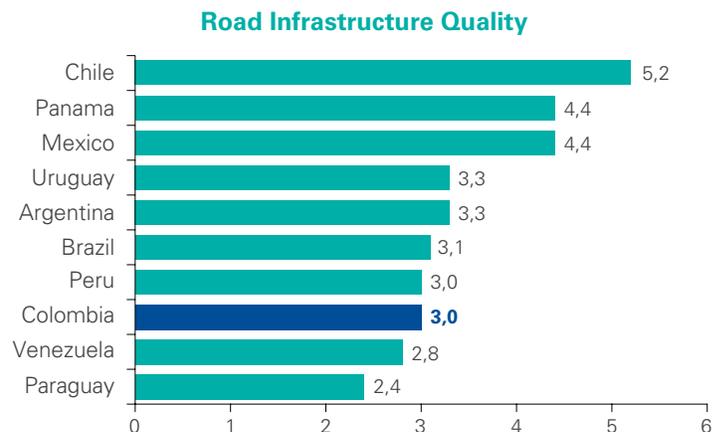
According to the World Economic Forum in The Global Competitiveness Report 2017-2018, Colombia ranks 110 out of 137 countries in road infrastructure quality.



Source: Mintransporte 2016

## Overview of Highway Concessions in Colombia

- Concession procurement emerged as an alternative mechanism for financing the creation, maintenance, improvement, and operation of road infrastructure.
- Before the modification of the Colombian constitution in 1991, investment in infrastructure came only from the government. After 1992, private investment was included as an alternative for this kind of projects.
- In Colombia, due to concentration of its economic activity and its irregular geography, infrastructure has a profound impact on business costs and competitiveness.
- According to specialists and government institutions, there is a lack in regulatory framework investment for basic infrastructure.





## Overview of Highway Concessions in Colombia

- In 1992, the government began a national order concession program that has evolved in multiple generations of concessions.
- Concession contracts are generally divided into four generations. All generations have already been concessioned and they are either Construction or Operation & Maintenance phases.
- From 1994 to 2012 the highways under concession were 26. From 2012 to 2015 the government structured the 4th generation of concessions, in order to improve and expand Colombia's road network. Actually, there are 64 highways under concession, including un-solicited proposals.
- The concessions with the greatest progress within the 4th generation are Girardot- Honda- Puerto Salgar and the PPP Cartagena-Barranquilla- Circunvalar de la prosperidad, with a progress of 59.8% and 57.6% respectively.

## Road Investment

- The government has focused on three areas:
  - i) Facilitate and promote private investment in infrastructure (strengthen project's technical, legal, and financial structure)
  - ii) PPPs as a mechanism for public infrastructure development (encourage the use of new schemes of project management in the context of the PPPs)
  - iii) Maintain and strengthen private participation in infrastructure (concessions).
- Additionally, the government is working with the program called "Vias para la Equidad" , where 48 of 53 projects had been awarded. The estimated value of investment is COP 4 billion (approximately USD 1.4 billion).
- Awarded unsolicited proposals account for 23 projects that represent USD 7.8 billion in CAPEX.

## Road Concessions Generations

	First Generation	Second Generation	Third Generation	Fourth Generation
<b>Compensation</b>	Minimum revenue guaranteed	Expected revenue (sum of the expected toll revenue in real term)	Expected revenue (value of the the toll revenue collection and government payments in constant prices). For "Ruta del Sol", Expected revenue (present value of the the toll revenue collection and government payments - VPIT) plus any potential commercial revenue	A minimum guaranteed toll collection revenue (known as VPIP*) plus government payments and any potential commercial revenue. The compensation is under an availability payment scheme
<b>Term</b>	Fixed term (between 20 to 30 years)	Variable term	Variable term with a maximum of 25 years	Fixed term (minimum of 25 years to a maximum of 29 years)
<b>Environmental licenses</b>	Not applicable	The licenses are a requeriment to sign the contract	The licenses are a requeriment to initiate the construction and the risk is assumed by the private sector	Under responsibility of the private investor, up to a limit. According to the percent of cost overruns, the risk is shared between the public and private sector
<b>Land acquisition</b>	The government, through the INVIAS, was responsible for the land adquisition	The land acquisition was assumed by the private sector but the purchasing management was responsibility of the public sector (INVIAS)	Under responsibility of the private investor, up to a limit. According to the percent of cost overruns, the risk is shared between the public and private sector	Under responsibility of the private investor, up to a limit. According to the percent of cost overruns, the risk is shared between the public and private sector
<b>Guarantees</b>	Minimum revenue guaranteed (MRG), over cost guarantees	Liquidity and foreign exchange support	Liquidity and other risk allocation by the Government through the use of the Contingency Fund. For "Ruta de Sol", the government guarantees VPIT at the end of the concession.	The government guarantees a minimum of toll collection revenue, with 3 periodical revisions. There is also foreign exchange support (a percentage of government payment in dollars)
<b>Control mechanisms</b>	Fiduciary and third-party auditing			

\*Calculated as the present value of the toll revenue discounted with a contractual discount rate

# Current Road Concessions

## Highways – First Generation of Concessions

Project	Current sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Santa Marta-Rioacha-Paraguachon	SM Holdings (94,99%) Paraguachon Holdings (5,009%) Carraipia Holdings (0,000014%) Albania Holdings (0,000014%) Manoure Holdings (0,000014%)	285	O&M	283
Bogota-Caqueza-Villavicencio	EPIANDES S.A. (59,32%), ABERTIS Infraestructuras (40%) Corporacion Financiera Colombiana (0.25%), CONCECOL Ltda. (0.25%), RENDIFIN S.A. (0.18%)	85	Construction	1120
Armenia-Pereira-Manizales	Grupo Odinsa S.A. (62%), Megaproyectos (22%), Infercal (3.2%), Jose Pablo Uricoecha & Cia. (3.2%), Conca S.A. (3.5%), Constructora Tao (3%), Others (3.2%)	202	O&M	134
Desarrollo vial del norte de Bogota	Mincivil (55%), Equipo Universal (16%), Castro Tcherassi (13%), Civilia (8%), Others (8%)	50	O&M	199
Bogota-Siberia-La Punta-El Vino-Villeta	ICEIN - Ingenieros Constructores e Interventores S.A. (25%), Pavimentos Colombia S.A. (25%), Mario Alberto Huertas Cotes (25%), Conca S.A. (25%)	81	Construction	263
Cartagena-Barranquilla	Edgardo Navarro Vives (50%), Consultores del Desarrollo (50%)	93	O&M	191
Fontibon-Facatativa-Los Alpes	Proyectos de Infraestructura (50,49%), Banca de Inversion Bancolombia S.A. Corporacion Financiera (25,5%), Concreto (24%), Others (0.01%)	38	O&M	139
Desarrollo vial del oriente de Medellin y Rio Negro	Mario Huertas Cotes (24,05%), Fiducolumbia (24,05%), Pavimentar S.A. (11,79%), Procopal S.A. (12,27%), Equipos Universal (12,026%), Castro Tcherassi (12,026%), Others (3.79%)	297	Construction	220
		<b>Total</b>	<b>796</b>	<b>2,548</b>

Source: National Infrastructure Agency - ANI  
Exchange rate: 2,984 COP/USD  
USD Real – 2017 avg.

- In 1992 the Government launched a program for road concessions in order to face the challenges of globalization, economic openness, and a financial crisis.
- In this stage, 9 road projects were awarded under concession, for a total length of 796 kilometers.
- These projects underwent several modifications due to by the government's lack of experience with this kind of projects.

A distinctive feature of the projects of this first stage was the high number of modifications, due to the government's lack of experience.

The weaknesses during this stage were:

- Delayed disbursement
- Delayed approval of environmental licenses
- Changes in the initial designs
- Relocation and removal of toll booths

## Highways – Third Generation of Concessions

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Briceño - Tunja - Sogamoso	Carlos Alberto Solarte (50%), Nelly Beatriz Daza de Solarte (25%), Luis Fernando Solarte Viveros (5%), Gabriel Solarte (5%), Diego Solarte (5%), Maria Victoria Solarte (5%), Luis Fernando Solarte Marcillo (5%), Others (0.012%)	202	Construction	583
Pereira - La Victoria	Conalvias (95%), Patria S.A. (4.97%), Others (0.03%)	54	O&M	121
Cordoba - Sucre	Constructora Emma Ltda. (18%), KMA Construcciones S.A. (51%), Obras Especiales Obresca S.A. (31%), Others (0.2%)	178	Construction	414
Area metropolitana de Cucuta y Norte de Santander	Pavimentos Colombia S.A. (20%), Constructora Colpatría (15%), Latinco S.A. (10%), Mincivil S.A. (10%), Oddico (10%) Topco (10%), Termotecnica Coindustrial (10%), Others (1.5%)	152	Construction	172
Girardot - Ibague - Cajamarca	Constructora Colpatría S.A. (15%), Mincivil S.A. (15%), Termotecnica Coindustrial S.A. (15%), Constructora San Isidro S.A. (14%), Topco S.A. (14%) Latinco S.A. (13%), Others (14%)	147	O&M	318
Ruta Caribe	Constructora Emma Ltda. (20%), KMA Construcciones S.A. (58%), Obras Especiales Obresca (22%), Others (0.2%)	288	Construction	446
Ruta del Sol - Sector I	Carlos Alberto Solarte (25%), Conconcreto (25%), CSS Constructores S.A. (25%), IECSA S.A. (25%)	78.3	O&M	480
Zipaquira- Bucaramanga (Palenque)	Hidalgo E Hidalgo (100%)	371	Reversion	118
Ruta del Sol - Sector III	Salini Impregilo SpA (40%), Infracon (29%), Capital privado RDS (17%), Impregilo Internacional Infrastructures N.V. (8.3%), Conalvias (6%)	465	Construction	702
Transversal de las Americas-1	Valorcon (33,33%), Construcciones el Condor (66,67%)	714	Construction	597
Buga- Loboguerrero	CSS Constructores (100%)		O&M	21
		<b>Total</b>	<b>3,357</b>	<b>5,693</b>

Source: National Infrastructure Agency - ANI  
Exchange rate: 2,984 COP/USD  
USD Real – 2017 avg.

- During 2002-2010 the government continued promoting the privatization of road infrastructure projects. The third generation began in 2002 and the Government designed a program which included 14 road projects under concession, three of them already ended.
- Currently, there are 3,357 kilometers from this generation under concession, with an estimated investment at that time was about USD 5.6 billion.

## Highways – Fourth Generation of Concessions

- The Colombian government has the objective of investing approximately USD 25 billion to improve, rehabilitate and maintain the existing roads and build new ones.
- In the present generation 3,068 kilometers of public initiative concessions have been awarded and currently the estimated investment is about USD 10,3 billion approx.
- Fourth generation concessions were awarded in three different waves. The first wave involved 9 projects, which were awarded between May and October 2014.

### Fourth Generation of Concessions – First Wave

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Autopista al Río Magdalena 2: Ruta del Sol - Alto de Dolores - Remedios	OHL Concesiones Colombia S.A.S. (60%), IMF investors (40%)	144	Construction	558
Conexión Pacífico 3 Highway	Mario Huertas (26%), Construcciones el Cóndor S.A. (48%) and Meco (26%)	146	Construction	529
Perimetral de Oriente de Cundinamarca	Shikun & Binui VT AG (48,125%) Colombiana Inversiones de Infraestructura (1,875%) Infrared Capital Partners (50%)	153	Construction	453
Conexión Norte Highway: Remedios - Zaragoza - Cuacasia	KMA Construcciones S.A. (14,66%), Ortiz Construcciones Y Proyectos S.A. Sucursal Colombia (25,50%), Unidad de Infraestructura y Concesiones Asociadas (20,59%), Solarte Nacional de Constructores (13,25%), SP Ingenieros (13,50%), Valores y Contratos (12,50%)	145	Construction	400
Mulalo – Loboguerrero – Cali	EPISOL (100%)	31	Pre-construction	505
Conexión Pacífico 2 Highway: Bolombolo - La Pintada - Primavera	Grupo Odinsa (78,85%), Construcciones El Cóndor (21,15%)	98	Construction	384
Cartagena – Barranquilla – Malambo	MHC Ingeniería y Construcciones (30%), Constructora Colpatría (30%), Constructora Meco (30%), Castro Tcherassi (10%)	146	Construction	404
Honda - Puerto Salgar - Girardot	Mario Huertas (30%), Pavimentos de Colombia (30%), Constructora Meco (30%), Ingeniería de Vías (10%)	190	Pre-construction	360
Conexión Pacífico 1 Highway: Bolombolo - Camilo C - Ancon Sur	Episol (89,90%), CFC-SK Fund (10,10%)	49	Pre-construction	695
<b>Total</b>		<b>1,053</b>		<b>4,287</b>

Source: National Infrastructure Agency - ANI  
Exchange rate: 2,984 COP/USD  
USD Real – 2017 avg.

#### Fourth Generation of Concessions – Second Wave

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Villavicencio - Yopal	EPISOL (60%), CONCECOL (40%)	266	Pre-construction	778
Santana - Mocoa - Neiva	CASS Constructores y Cia. (30,78%), Carlos Alberto Solarte Solarte (62,22%), Estyma (10%), Latinoamericana de Construcciones (7%) *	447	Construction	620
Popayan - Santander de Quilichao	Hidalgo e Hidalgo (30%), Cass Constructores & Cia. S.C.A. (35%), Carlos Alberto Solarte Solarte (35%) *	76	Pre-construction	492
Autopista al Mar 1 - Medellin - Santafe de Antioquia - Bolombolo	Strabag S.A.S. (37,50%), SACYR Colombia S.A.S. (37,50%), Concaay S.A. (25%)	176	Construction	601
Puerta de Hierro - Cruz del Vizo - Palmar de Varela	SACYR (100%)	202	Pre-construction	185
Pasto - Rumichaca	SACYR Concesiones Colombia S.A.S. (60%) and Herdoiza Crespo Construcciones Colombia S.A.S. (40%)	80	Pre-construction	674
Bucaramanga - Barrancabermeja - Yondo	Cintra Infraestructura Colombia S.A.S. (40%), RM Holding S.A.S. (30%), MC Victorias Tempranas S.A.S. (30%)	151	Pre-construction	695
Autopista Mar 2 - Cañas Gordas - El Tigre	China Harbour Engineering Company (40%), SP Ingenieros SAS (20%), Sonacol SAS (10%), Pavimentar S.A (15%), Unidad de Infraestructura y Construcciones Asociadas SAS (10%), Termotecnica Coindustrial (5%)	136	Construction	634
Sisga - El Secreto	KMA Construcciones S.A. (40%), Ortiz Construcciones y Proyectos (40%), Obresca (20%)	137	Pre-construction	218
		<b>Total</b>	<b>1,671</b>	<b>4,898</b>

Source: National Infrastructure Agency - ANI  
Exchange rate: 2,984 COP/USD USD Real – 2017  
Owner information according to ANI's latest information available

#### Fourth Generation of Concessions – Second Wave

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Bucaramanga-Pamplona	CSS Constructores (100%) *	134	Pre-construction	328.1
Pamplona- Cucuta	SACYR Concesiones Colombia S.A.S. (100%)	62	Pre-construction	328.1
		<b>Total</b>	<b>134</b>	<b>1,101</b>

Source: National Infrastructure Agency – ANI  
Exchange rate: 2,984 COP/USD USD Real – 2017  
Owner information according to ANI's latest information available

## Unsolicited Proposals

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
Girardot- Ibague - Cajamarca	Mincivil (29%), Latinco (13%), Constructora Colpatria (29%), Termotecnica Coindustrial (15%), HB Estructuras Metalicas (14%)	225	Construction	485
IP Antioquia- Bolivar	Construcciones el Condor (50%), Infrared (50%)		Pre-construction	536
Tercer carril Bogota - Girardot	Constructora Conconcreto S.A. (25%), Industrial Conconcreto S.A.S. (25%), Vinci Higways (50%)	146	Pre-construction	831
IP Via al Puerto	Carlos Alberto Solarte S.A.S. (34%) CASS Constructores S.A. (33%) Constructra Conconcreto (33%) *	Pending	Pre-construction	n.i
Vias del Nus	Mincivil (51,85%), Construcciones el Condor (21,10%), SP Ingenieros (22,22%), Enrique Davila Lozano (3,72%), Latinoamericana de Construcciones (1,11%)	157	Construction	520
Malla Vial del Meta	Odinsa (51%), Murcia y Murcia (30%), Construcciones el Condor (11%), Sarugo (8%)	354	Pre-construction	600
Neiva - Girardot	ALCA Ingenieria (15%), CSS Constructores (85%)*	193	Pre-construction	364
Cesar - Guajira	Construcciones el Condor (100%)	350	Construction	175
Cambao - Manizales	Gaico Ingenieros Constructores (22%), ICEIN (25%), Mota Engil (25%), ALCA Ingenieria (21%), Construccion y Desarrollo Ingenieria (3%), Fortress (4%)	256	Pre-construction	249
Chirajara - Villavicencio	Episol (25%), Concecol (75%)	86	Pre-construction	901
IP Pereira - La Victoria, Cerritos - La Virginia	Infraestructura Concesionada S.A.S. –INFRACON S.A.S	n.a	Feasibility in study	82
IP Duitama - Pamplona	Promesa de Sociedad Futura DuipamS.A.S. (ERGON INGENIERÍA S.A.S. –CONSULTORIA INVERSIONES & PROYECTOS CIP)	308	Feasibility in study	156
DESARROLLO VIAL BAJO SINU (LORICA – CHINU)	n.a	Pending	Pre - feasibility in study	n.i
IP Corredor Vial Zipaquira-Bucaramanga	Promesa de Sociedad Futura AutoviaZipaquira-Bucaramanga	Pending	Pre - feasibility in study	596
IP Corredor Perimetral del Sur	TRADECO Infraestructura Sucursal Colombia	33	Pre - feasibility in study	135
IP Circunvalar de Occidente	PSF CIRCUNVALAR DE OCCIDENTE -SANTA ROSA S.A.S	68	Feasibility in study	535
IP Cruce de la Cordillera Central		Pending	Feasibility in study	n.i

Project	Current Sponsors	Length (Km)	Current phase	Estimated investment (USD million)
IP Sistema Vial de Acceso a Mompox	Gercon S.A	Pending	Feasibility in study	472
IP Bogota North Access - Phase II	n.a	Pending	Feasibility in study	n.i
IP Autopistas del Caribe	KMA Construcciones S.A		Bidding in process	532
IP Cordoba- Sucre	Constructora Emma Ltda. (18%), KMA Construcciones S.A. (51%), Obras Especiales Obresca S.A. (31%), Others (0.2%)	Pending	Feasibility in study	475
North Access to Bogota	Mincivil S.A. (57,43%), Integra de Colombia S.A.S. (4,84%), Civilia S.A. (7,05%), Equipo Universal S.A. (16,60%), Ofinsa Inversiones S.A.S. (0.27%), Castro Tcherassi S.A. (13,81%)	43	Pre-construction	193
ALO Calle 13- Autopista Norte	n.a	Pending	Pre-Feasibility in study	828
ALO South Tram: Canoas- Calle 13	n.a	8	Under Approval	348
Bogota North Access- Phase I	n.a	Pending	Awarded	426
		<b>Total</b>	<b>1,919</b>	<b>9,439</b>

Source: National Infrastructure Agency – ANI  
Exchange rate: 2,984 COP/USD USD Real – 2017  
Owner information according to ANI's latest information available

## Opportunities

### Projects Under Study as Public Initiatives without Public Resources

The government was forced on reducing the amount of projects for the third wave of 4G concessions. However, the following projects are currently under study:

Project	Length (Km)	Investment (USD million)
Barbosa- Los Curos	210	369
Ocaña - Cucuta	192	469
Duitama - Pamplona	308	235
Sogamoso - Mani	172	235
Mariquita - Chinchina	136	201
Zipaquira - Bucaramanga	370	302
Pasto - Mojarras	125	235
Mojarras - Popayan	344	905
<b>Total Investment</b>		<b>2,949</b>

Source: National Planning Department – DNP  
Exchange rate: 2,984 COP/USD, USD Real – 2017 avg

## Secondary Market Opportunities:

Opportunity	Ownership	Investment	Observations
Conexion Norte Highway: Remedios - Zaragoza – Cuacasia.	<ul style="list-style-type: none"> <li>• KMA Construcciones S.A. (14,66%)</li> <li>• Ortiz Construcciones Y Proyectos S.A. Sucursal Colombia (25,50%)</li> <li>• Unidad de Infraestructura y Concesiones Asociadas (20,59%)</li> <li>• Solarte Nacional de Constructores (13,25%)</li> <li>• SP Ingenieros (13,50%)</li> <li>• Valores y Contratos (12,50%)</li> </ul>	USD 53 million	<ul style="list-style-type: none"> <li>• Empresarial Solarte group has announced their interest in selling its participation (13,25%), Solarte Nacional de Constructores belongs to the firm.</li> <li>• Total project investment: USD 400 million</li> <li>• Stage of Construction Progress: 20.96%</li> <li>• The project had reached its financial closure</li> </ul>
Santana - Mocoa - Neiva	<ul style="list-style-type: none"> <li>• CASS Constructores y Cia. (30,78%)</li> <li>• Carlos Alberto Solarte Solarte (62,22%)</li> <li>• Estyma (10%)</li> <li>• Latinoamericana de Construcciones (7%)</li> </ul>	USD 576.6 million	<ul style="list-style-type: none"> <li>• Empresarial Solarte group has announced their interest in selling its participation (93%), CASS Constructores y Cia belongs to the firm.</li> <li>• Total project investment: USD 620 million</li> <li>• Stage of Construction Progress: 5.00%</li> </ul>
Popayan - Santander de Quilichao	<ul style="list-style-type: none"> <li>• Hidalgo e Hidalgo (30%)</li> <li>• Cass Constructores &amp; Cia. S.C.A. (35%)</li> <li>• Carlos Alberto Solarte Solarte (35%)</li> </ul>	USD 344.4 million	<ul style="list-style-type: none"> <li>• Empresarial Solarte group has announced their interest in selling its participation (70%), CASS Constructores y Cia belongs to the firm.</li> <li>• Total project investment: USD 492 million</li> <li>• Stage of Construction Progress: 0.00%</li> </ul>
Bucaramanga-Pamplona	<ul style="list-style-type: none"> <li>• CSS Constructores (100%)</li> </ul>	USD 329.1 million	<ul style="list-style-type: none"> <li>• Empresarial Solarte group has announced their interest in selling its participation (100%), CSS Constructores belongs to the firm.</li> <li>• Stage of Construction Progress 0.00</li> </ul>
IP Via al Puerto	<ul style="list-style-type: none"> <li>• Carlos Alberto Solarte S.A.S. (34%)</li> <li>• CASS Constructores S.A. (33%)</li> <li>• Constructra Concreto (33%)</li> </ul>	n.a	<ul style="list-style-type: none"> <li>• Empresarial Solarte group has announced their interest in selling its participation (67%), CASS Constructores y Cia belongs to the firm.</li> <li>• Stage of Construction Progress 1.61%</li> </ul>

# B. Airport

## Overview



Source: Mintransporte

In Colombia, the Special Administrative Unit of Civil Aeronautics (Aerocivil) is in charge of the development and growth of aeronautics as well as of controlling air traffic within Colombia's air space.

Concessions related to airport construction are currently managed by the Aerocivil, but in the near future, the National Infrastructure Agency will take over this task.

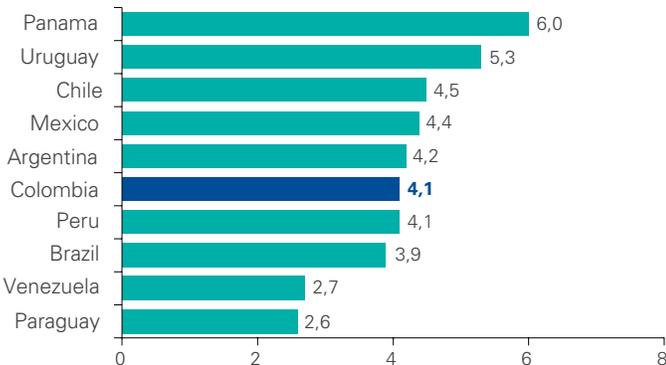
According to Transport Ministry, Colombia has 590 airports: 74 owned by Aerocivil, 214 private airports, 94 owned by the municipalities, 9 military airports, 14 from the districts and 185 of fumigation.

### Airports under concession



Source: Aerocivil – Special Administrative Unit of Civil Aeronautics

### Air transport infrastructure quality





## Current Airport Concessions

Concessionaires	Concessions	Owners (operating partner)	Country of Origin	Date Awarded	Investment (USD million)
OPAIN S.A.	El Dorado Airport (Bogota)	<ul style="list-style-type: none"> <li>• Grupo Odinsa S.A. (31.6%)</li> <li>• CSS Constructores S.A. (29.98%)</li> <li>• Grupo Condor Inversiones S.A. (15%)</li> <li>• Marval S.A. (10%)</li> <li>• Termotécnica Coindustrial S.A. (10%)</li> <li>• Arquitectura y Concreto S.A. (3.33%)</li> <li>• Luis Hector Solarte Solarte (0.01%)</li> <li>• Flughafen Zurich AG (0.01%)</li> <li>• Carlos Alberto Solarte Solarte(0.01%)</li> </ul>	Colombia	12/09/2006	766
Sociedad Operadora de Aeropuertos Centro Norte S.A.	<ul style="list-style-type: none"> <li>• Rio Negro Airport</li> <li>• Medellin Airport</li> <li>• Monteria Airport</li> <li>• Quibdo Airport</li> <li>• Carepa Airport</li> <li>• Corozal Airport</li> </ul>	<ul style="list-style-type: none"> <li>• CAH Colombia S.A. (120%)</li> <li>• Aerocap S.A.S (10%)</li> <li>• Aeropuerto CANCUN S.A.(70%)</li> </ul>	Colombia and China	3/03/2008	150
Sociedad Aeroportos de Oriente S.A.S	<ul style="list-style-type: none"> <li>• Santa Marta Airport</li> <li>• Cucuta Airport</li> <li>• Barrancabermeja Airport</li> <li>• Bucaramanga Airport</li> <li>• Riohacha Airport</li> <li>• Valledupar Airport</li> </ul>	<ul style="list-style-type: none"> <li>• Olímpica SA. (44%)</li> <li>• Incoequipos SA. (5.22%)</li> <li>• Nexus Infraestructura FCP (43.66%)</li> <li>• Pedro Ramon Emiliani (6.77%)</li> <li>• Nexus Infraestructura SAS (0.34%)</li> </ul>	Colombia	1/08/2010	106.55

Concessionaires	Concessions	Owners (operating partner)	Country of Origin	Date awarded	Investment (USD million)
Aerocali S.A.	Cali Airport	<ul style="list-style-type: none"> <li>AENA Desarrollo Internacional S.A. (51.01%)</li> <li>Corporacion Financiera Colombiana S.A. (48,99%)</li> </ul>	Spain - Colombia	2/09/2000	70.01
Sociedad Aeroportuaria de la Costa S.A. – SACSA S.A.	Cartagena Airport	<ul style="list-style-type: none"> <li>AENA Desarrollo Internacional S.A. (37.89%)</li> <li>Concecol LTDA (11.55%)</li> <li>Terpel del Norte S.A. (10.06%)</li> <li>Inversiones SILLAR SEGOVIA (5.81%)</li> <li>Inversiones Leonor Arocha (5.12%)</li> <li>Inversiones Gecu S.A.S (7.59%)</li> <li>Rafael Enrique Perez (0.50%)</li> <li>Promociones R Cavelier (0.50%)</li> <li>– CICON S.A (0.49%)</li> <li>– OTHERS (20.9%)</li> </ul>	Spain - Colombia	26/09/1996	62.88
Grupo Aeropuertos Caribe S.A.S	Barranquilla Airport	<ul style="list-style-type: none"> <li>Valores y Contratos S.A (Valorcon) (41.5%)</li> <li>Equipo Universal (41.5%)</li> <li>Inversiones Millenium Azpo (17%)</li> </ul>	Colombia	31/12/2014	127.27
OPAM	Metacaña Airport (Pereira)	<ul style="list-style-type: none"> <li>CSS Constructores S.A (100%)</li> </ul>	Colombia	30/11/2016	32
<b>Total</b>					<b>1,282</b>

# Opportunities

## El Dorado II Airport

The project consists on the administration, modernization and expansion, operation, commercial exploitation and maintenance of the concessionaire area of the Airport El Dorado in Bogotá D.C.

The contract was signed on September 12 of 2006 with a estimated completion time of 240 months. The estimated date to completion is January 12 of 2027.

<b>Estimated investment</b>	<ul style="list-style-type: none"> <li>Initial investment: USD 1,500 million</li> <li>Additions and overruns: N/A</li> </ul>
<b>Sponsors</b>	<p><b>Current sponsors</b></p> <ul style="list-style-type: none"> <li>Grupo Odinsa (35%)</li> <li>Grupo Argos (30%)</li> <li>Others (35%)</li> </ul>

## New Cartagena Airport Materialization

Odinsa, Grupo Argos' subsidiary, announced that it will be the majority shareholder to carry out the design, financing, construction, operation and commercial exploitation of the new Cartagena airport. The company will have a 70% share in the work, which includes an estimated investment of USD 600 million. Feasibility studies are being processed, the work could take between 4 and 5 years.

## Gustavo Rojas Pinilla (San Andres) and El Embrujo (Providencia)

The public initiative is currently under approval. The construction of both airports consist in an investment of USD 306 million. The bidding process is expected to start in the remaining year 2018.

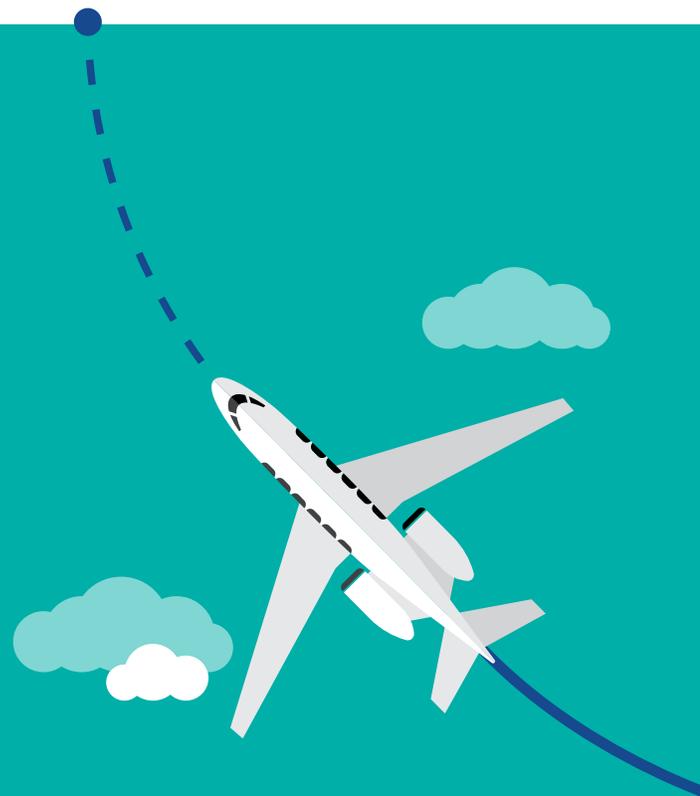
# Secondary Market

## Matecaña Airport (Pereira)

The project's objective is the construction, modernization, and set up of the landside near the International Matecaña Airport that serves the city of Pereira. This project also seeks to improve its administration, operation, maintenance, and commercial use. CSS Constructores S.A was the concessionaire that gained the bidding process of new airport building.

OPAM (Operadora Portuaria del Aeropuerto Matecaña) is waiting for changes in the shares participation of CSS concessionaire. CSS Constructores S.A. is part of Solarte y Solarte group, that had presenter their interest on selling their stock participation

Seller	Phase	Investment USD	Type of Initiative	Timing
CSS Constructores S.A	Feasibility	USD 32 million	Public	[Unknown]



# C. Railways

## Overview

The current rail network is essentially divided into the following classes:

- ANI is in charge of all Km of railways of the country that are under concession
- Currently administered by ANI, for its future concession
- Private corridors
- The corridors that had been given out in concession were in charge of the National Institute of Roads – INVIAS (Administered by INVIAS)

	Km	Railway Stretch	Institution in Charge of the Administration
<b>Inactive Network</b>	<b>1,689</b>		<b>INVIAS</b>
Railway Network in Concession	498	Buenaventura- Cali (174 Km) Cali- Cartago (173 Km) Cartago- La Felisa ( 111 Km) Zarzal-Tebaída (40 Km)	ANI
	245	Chiriguana- La Loma- Ciénaga (207 Km) Ciénaga- Santa Marta (38 Km)	
<b>Total Network in Concession</b>	<b>743</b>		
Railway Network to be Concessioned	894	Bogota- Belencito (257 Km) La Caro- Zipaquira (19 Km) Facatativa- Bogota (40 Km) Bogota- Soacha (18 Km) La Dorada- Chiriguana (522 Km) Grecia-Cabañas ( 34 Km) Ramal Capulco (4 Km)	
<b>Total Network Administered by ANI</b>	<b>1,637</b>		
<b>Total National Network</b>	<b>3,515</b>		

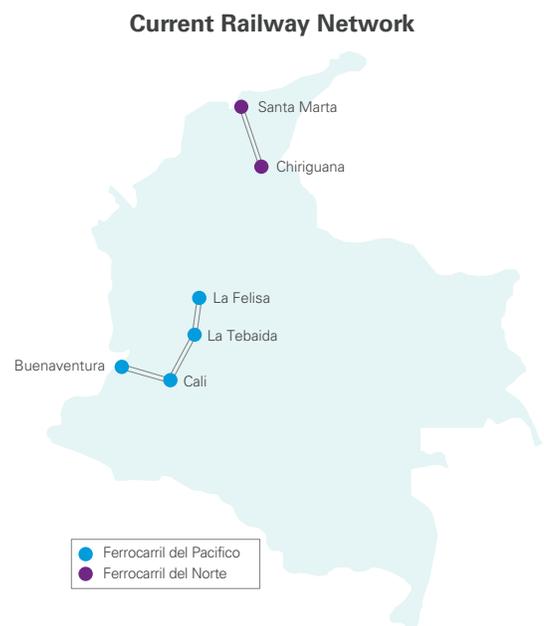


## Railway Public Concessions

Route	Concessionaire	Owners	Start	End	Length (Km)
Chiringuana (PK74) – Ciénaga (PK934) – Santa Marta (PK969)	Fenoco S.A (Ferrocarriles del Norte)	Drummond Ltd, Glencore and Prodeco	2000	2030	245
Buenaventura (PK0) –Cali (PK170) –La Felisa (PK 459) – Zarzal (PK304) –La Tebaida (PK343)	Ferrocarriles del Pacífico	Trafigura, Mariverdo, OPP Graneles	2000	-	498

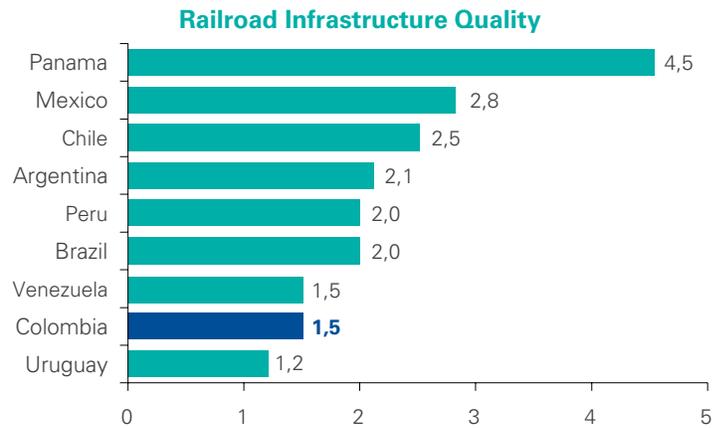
The railway network covers 3,300 Km, of which approximately 799 are in operation under concession contracts. No concession infrastructure has been in the process of rehabilitation for several years, yet there are still about 1,510 Km of inactive lines. Rail freight movement is significant in the case of coal but low in the case of general cargo (in 2016, nearly 55 million tons of coal compared to only 643 thousand from the rest of cargo). Several studies have identified the important role of the intermodal rail operation and the mobilization of general cargo.

According to World Bank’s Doing Business 2018 Report, Colombia ranks 94 out of 160 countries in logistics performance.



In regards to railroad infrastructure quality, Colombia ranks 96th out of 144 countries.

The poor score given to Colombia is due to the lack of investment through its history. Also, according to World Bank's Doing Business 2018 Report, Colombia ranks 94 out of 160 countries in logistics performance. Exporting a container from Colombia has a cost of USD 2,160, which is relatively high when compared to Mexico (USD 1,677) and almost three times the cost in Chile (USD 685) or Peru (USD 788).



### Restrictions to Railway Transportation

Railway operation requires constant, predictable and large volumes, in order to achieve profitable conditions. Developed countries have emphasized the importance of intermodal transportation, appealing to railway system advantages and as a way of creating more demand for railway transportation. With the exception of container transportation, intermodal transportation is a tool of minor utilization in the railway system.

According to a study by ANIF (National Association of Financial institutions), only 1.5% of load transportation in Colombia is made using intermodal transportation, while in Europe it reaches 60%. This shows the great challenge to be faced in terms of investment. ANIF also states that the incidence of the transportation cost related to infrastructure problems is between 10% and 35% of export goods final price. International average stands around 6%. However, the price of goods is not only affected by infrastructure problems. Logistics issues also represent around 19% of final sell value, which is high when compared to the OECD average of 6%. Additionally, Colombia presents the following considerations regarding intermodal transportation:

- There is an excessive concentration of load and passenger transportation in roads, and a lack of connection with other transportation means. This is mainly due to the structural flaws in alternative means.

- Transportation costs have an approximate weight of 10%-20% over operative expenses for the main goods produced in Colombia. It is believed that intermodal transportation would represent a significant cost reduction.
- Fluvial and railway transportation offer lower costs in terms of ton/Km than road transportation. However, their average speeds are significantly lower than in the case of roads:

Transportation mean	Cost USD (ton/Km)	Speed (Km/h)
Road	92	50
Railway	78	25
River	64	14

## Restrictions to Railway Transportation

By 2012, the National Government launched a strategy to recover the rail corridors and reactivate the freight operation that consisted in the implementation of three phases:

1

in the short term, restore the corridors administrated by the ANI

2

in the medium term, grant these corridors in concession in response to the Unsolicited Proposals received

3

in the long term, deliver the development of new corridor through Unsolicited Proposals

Source: (2017). DNP, CONPES

## National Government's Strategy

The first phase focused on the recovery of the rail corridors La Dorada - Chiriguana (522 Km) and Bogota - Belencito (260 Km).

UTFC (Rubau, Sonacol, Rabs Ingenieria, and Ferroviaria Central), winner of the tender, executed the project and transferred it into an unsolicited proposal.

Implementation of phases 2 and 3 has been in process, especially because despite having received more than 40 unsolicited proposals for railway projects in the mentioned corridors, most of them have not received government approval since higher tariffs and public subsidies are required in order to make the project bankable.

ANI already awarded the operation for La Dorada – Chiriguana and Bogota – Belencito railway corridors to the "IBINES FERREO" consortium. The contract's value was USD 51 billion and will have a 14 months term. Both are traditional procurements.

ANI is carrying out a process to hire a consultant to conduct the technical, legal and financial structuring for a public initiative PPP for La Dorada – Chiriguana corridor, with the intention of delivering the corridor in concession once the construction process is finished. The private initiative was submitted before ANI by June, 2018.



Source: ANI

# Opportunities

## Antioquia Railway

The project consists in the rehabilitation and modernization of Antioquia railway as a multiproposal train (passengers and commodities transport).

Entities in Charge	Pre- Investment Value	Investment Value
Sociedad Promotora Ferrocarril de Antioquia S.A.S	USD 2.3 million	USD 366 million

## Caribe Train

The project consists in the development of an integrated transport regional system, connecting Barranquilla, Cartagena and Santa Marta. The investment value is USD 860 million.

## Aracataca Variant

The project seeks for the study and design of Phase III for the construction of a variant in the railroad of Aracataca municipality. The investment value is USD 70 million

## Buenaventura (PK0) – Cali (PK 170) –Felisa (PK 459) – Zarzal (PK304) – La Tebaida (PK343)

The actual stablished concession owned by Ferrocarriles del Pacifico is under liquidation. Once ended, the route will be out for bidding again.

*Exchange rate: 2,984 COP/USD  
USD Real – 2017 avg.*

## Unsolicited Proposals

Project Name	Description	Subsector	# of Initiaves <sup>1</sup>	Type of Initiative	Phase
Commuter train between Bogota and Zipaquira	Rehabilitation, modernization, management, operation, maintenance and exploitation of a railway between Bogota - San Antonio - Zipaquira	Passenger	7	Unsolicited proposal	Pre- Feasibility under study
Chiriguana - Dibulla corridor	Construction and operation of the railway between Chirugana to Puerto Brisa in Dibulla	Freight	1	Unsolicited proposal	Feasibility under study
Regional train of Choco	Railway concession from Quibdo to the port of Tribuga, passing through Nuqui. The railway has a length of 79.6 Km	Freight	1	Unsolicited proposal	Pre- Feasibility under study
Bogota Light Rail Calle 19 - La Sabana Station	Urban railway that connects Calle 19 with Carrera 3 to La Sabana station, connecting with Fontibon. The project includes the design, construction, financing, maintenance and exploitation of the Light Rail	Passenger	1	Unsolicited proposal	Pre- Feasibility under study
Cali tramway	Financing, design, construction, operation and maintenance of the Cali Tramway	Passenger	1	Unsolicited proposal	Pre-feasibility under study
Central Corridor: La Dorada - Chiriguana	Rehabilitation of the sector La Dorada - Chiriguana. Some of the initiatives included additional sectors such as the construction of the railway between Granada - La Tebaida (union with the Pacific railway), construction of a third rail line between Santa Marta and Chiriguana, construction of a rail line between Chiriguana - Dibulla, La Vizcaina - Zipaquira, and others	Freight	6	Unsolicited proposal	Pre-feasibility under study
Logistic corridor Bogota- Buenaventura and Ibague- Armenia	Construction of a tunnel through the central mountain chain and two transfer extensions, as well as the construction, operation, maintenance and exploitation of a railway between Armenia and Ibague	Freight	1	Unsolicited proposal	Feasibility under study

<sup>1</sup> Some projects have more than one initiative, as the Colombian law (Law 1508 of 2012) allows different companies of the private sector to present initiatives for the same corridor. However, it is important to notice that the projects are evaluated on a "first come, first served" basis

Source: KPMG and RUAPP

# D. Public Transportation

## Overview

Law No. 310 of 1996 established the possibility of the Nation to finance, with public resources, 40%-70% of the investment made in public transportation infrastructure.

As of today, Colombia has both Integrated Mass Transit Systems (SITP, in Spanish) in cities with more than 600,000 inhabitants and Strategic Public Transportation Systems (SETP, in Spanish) in cities with 250,000-600,000 inhabitants. There are currently 7 SITP in full operation, 8 public transportation systems pending implementation and 5 are being structured.

### Primary Market - Public Transportation Systems

In order to improve coverage, quality, safety, operational efficiency, connectivity and accessibility of the systems, the National Government, together with local authorities, has been implementing, with relative success, the "Policy to Improve Public Service Transportation for Urban Passengers" which includes the reorganization of the systems associated with integrated transport, comprehensive urban development measures and public space. In large cities, they are working on developing Integrated Mass Transit Systems (SITM), while the implementation of strategic public transportation systems (SETP) has begun in 12 cities (of 300,000 to 600,000 inhabitants). In smaller cities, the strategy of "Friendly Cities" was designed and in 9 border cities a program of "Bi-Friendly Systems" (SAB) was proposed." It is expected that the SITM's operation will have a major impact on reducing travel times (from 20% to 35% on average) and on reducing operating costs (approximately 30%).

In the case of Bogota, even with the experience of the Transmilenio mass transit system, implemented since late 2000 and which currently mobilizes almost a third of the trips taken in public transportation, the rest of the mass transit system continues its operation in low-efficiency conditions and a poor service level. Mobility district police established the framework of the Integrated Mass Transit Systems (SITP) solution that seeks to integrate the various components of public transportation (the collective Transmilenio system, Bus Rapid Transit - BRT), the network of bike paths and a future metro line and suburban train.





## Strategic Public Transport Systems

This project's targets are middle cities with a population of 300,000-600,000 people. The cities included in this group are: Armenia, Buenaventura, Ibagué, Manizales, Montería, Neiva, Pasto, Popayán, Santa Marta, Sincelejo, Valledupar and Villavicencio.

### Cities where the project is being implemented

City	Est. investment (USD million)
Pasto	93
Santa Marta	169
Valledupar	140
Popayan	130
Monteria	122
Sincelejo	80
Armenia	93
Neiva	143

Source: CONPES, End of the year exchange rate 2017: 2,984 COP/USD

## The National Development Plan and Public Transportation

The National Development Plan 2014–2018 has established a series of strategies in order to i) strengthen the operation of the various public transportation systems; ii) finance projects; iii) improve the institutional capacity of the sponsors; and iv) promote solutions for mobility and transport in the region.

### Strengthen the Operation

- It will cover 100% of demand
- It will encourage cities to look for low-cost, high impact solutions
- The transport operation will be coordinated with non-motorized means of transportation

### Finance projects

- For financial sustainability, traffic charges and parking management will be encouraged, among others.
- PPPs will be promoted in public transport projects
- Municipal subsidies will be reviewed

### Improve Institutional Capacity

- An intersectoral committee will be created
- Coordination between urban planning and mobility will be strengthened
- The monitoring team of the DNP will be strengthened
- Local governments will be strengthened

### Promote Mobility and Transport

- The implementation of regional partnership schemes will be promoted
- Corporate self-regulation instruments will be developed to provide transport services

## Integrated Mass Transit Systems in Colombia

The Integrated Mass Transit Systems were promoted in three CONPES documents:

- CONPES No. 3167 of May 23, 2002: establishes a policy to improve urban public passenger transportation. This document is aimed at "improving urban public passenger transportation by applying innovative financial tools and techniques in order to strengthen the process of decentralization and increase productivity and cities organization and consolidation, within a fiscal discipline."
- CONPES No. 3260 of December 15, 2003: presents a national policy of urban and massive transportation to "promote the implementation of Integrated Mass Transit Systems in major cities across the country and strengthen the institutional capacity to plan and manage traffic and transportation in other cities, in order to increase their quality of life and productivity and promote comprehensive urban development processes within a framework of fiscal efficiency that promotes new opportunities for private sector participation in the urban passenger transportation development and operation."
- CONPES No. 3833 of June 23, 2015: this document establishes a policy for the reprogramming of public resources destined to SITPs, except for Bogota, Barranquilla and Cartagena. It also puts in consideration the restructuring of some of the expense components for each system, in order to optimize the approved resources for project development and to comply with the objectives of 2014-2018 NDP.
- CONPES No. 3882 of January 10, 2017: this document shows the support of the National Government to the Mobility Policy of the Bogota-Cundinamarca Capital Region and establishes the strategic importance the Integrated Mass Transportations System in Soacha project in Phases II and III. The CONPES specifies the mechanisms and requirements necessary to materialize the support of the national Government in mobility improvement's projects.
- CONPES No. 3900 of September 25, 2017: presents the National Government support for public transport system of Bogota and declares the strategic importance of the First Metro Line- Section 1 project.
- CONPES No. 3902 of October 27, 2017: presents the strategic importance of RegioTram de Occidente project that seeks for the improvement of the passengers public regional transport system. Also the document establishes the National Government support to the Region mobility projects.
- CONPES No. 3923 of May 8, 2018: this document is the favorable concept for the nation to give warranty to the Metro de Bogota company to contract internal or external public credit operations up to by the sum of 7.8 billion constant pesos of December 2017, or it's equivalent in other currencies, intended for financing the first metro de Bogota Line 1 project.

The Nation and local authorities for SITM have invested COP 14.5 billion. With great concern it has been noted that the cities where these systems are operational have a widespread problem with regards to passenger demand, which is below the initial expectations, among other difficulties that have surfaced.

City	Management Entity	Length (km)	Operation Since	Estimated Demand (Passengers/Day)	Real Demand as of December 2016
Pereira	Megabus	16.15	August 2008	140,000	112,540
Cali	Mio	27.8	November 2008	960,000	451,627
Bogota	Transmilenio**	113*	December 2010	5,295,500	3,852,197
Barranquilla	Transmetro	13.4	July 2010	305,000	115,656
Bucaramanga	Metrolinea	8.9	December 2009	387,500	98,711

\*Main line

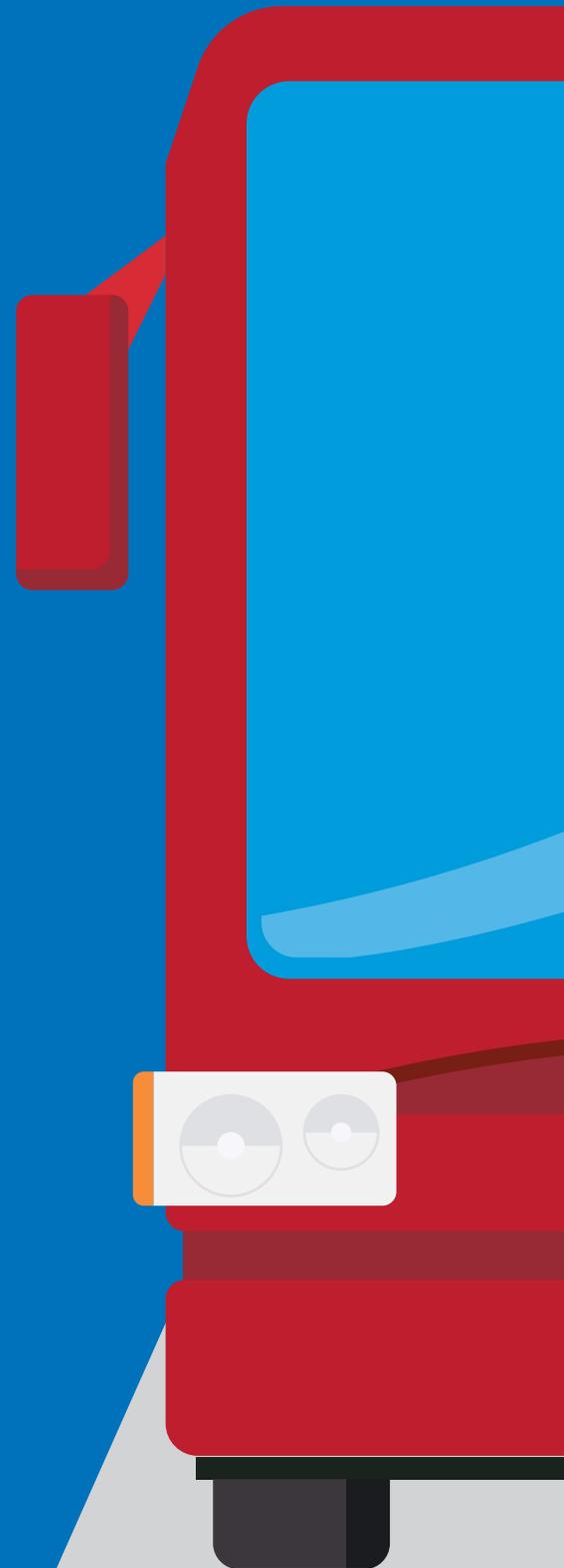
\*\*Part of the provision of the fleet was recently awarded but there still existing opportunities related to the system, as shown in the following pages.

## Integrated Mass Transit Systems in Colombia

In Colombia, there are two interurban railway systems and one metro project:

- “Metro Medellin” metro includes 80 trains, 27 stations and it transports an average of 900,000 passengers per day Bogota.
- Turistren or “Tourist Train of the Savannah”, an interurban train which main propose is to transport tourist and students from Bogota to universities located in towns close to the city. Consists 10-14 passenger carriages, six stations and an average transport of 1,071 passengers per day.
- Garcia Cadena (Santander) - Puerto Berrio (Antioquia), consists in the operation of passenger transportation through light trains between 12 routes, authorized by the Ministry of Transport, driving into Barrancabermeja City.

Project	Description	Entity in Charge
Metro de Medellin	The only metro project currently functioning in Colombia. It has 27 stations, and it is part of an integrated massive transport system, which includes a bus system and cable lines	Empresa Metro de Medellin (SOE)
Turistren	Interurban train. Its main purpose is to transport tourists and students from Bogota to universities located in towns close to the city. One of the main interests for the tourist for this train are the old locomotives, seen in just a few places around the world.	Turistren (private)
Garcia Cadena (Santander) - Puerto Berrio (Antioquia)	Railway passenger transport service, between the towns Garcia Cadena (Santander) and Puerto Berrio (Antioquia) passing through the city of Barrancabermeja; by operating light trains in the daily 12 frequency routes.	Coopsercol Ltda. (private)



# Opportunities

## Bogota Metro

It is expected that this project will begin in 2018 covering 30.5 Km and that will be part of the Integrated Mass Transit System in Bogota. The government has decided to develop an elevated Metro expected to be operational by 2022, which would reduce costs in about USD 1.3 billion and the amount of passengers using the service daily would increase by 500,000 daily users.

Investment (USD)	Phase	Type of Initiative
4,567 million	Being Structured	Public

Exchange rate: 2,746 COP/USD

## Barranquilla Tram

The project consist in the financing, design, construction, operation and maintenance of the Barranquilla Tram Railway Project that will be implemented through Carrera 51B from Calle 3B (Puerto Colombia) to Calle 93 (Barranquilla). The tram will work with electric light, strengthened with solar energy, will be special for people with disabilities and will have 12 stations along Calle 30.

The estimated investment for this project is of approximately USD 487 million. Currently the project is under approval phase.

## Suburban Train - Regiotram

This project is important for the government, as well for the local government of Cundinamarca, as it would provide an adequate railway between Bogota and surrounding municipalities. Regiotram is a light rail system that will develop on the existing corridor Tren de Occidente with a length of 40.9 Km. The infrastructure involves the construction of an electrification system to operate the rolling stock.

The estimated investment for this project is of approximately USD 523 million. Currently the project is being structured.

## Transmilenio– Carrera Septima

Currently, the project is under structuration including the construction of the central lane and the stations of the TransMilenio system by the Carrera Septima. It has been proposed that the project consist of 19.1 km of length and 23 stations.

## Transmilenio– Americas

TransMilenio Bus Rapid Transit PPP project consist in the provision a fleet of 1440 buses and the maintenance and operation of the fleet. The contracting process was separated into two components: 1) provision of fleet and 2) operation and maintenance of the fleet. The process was divided into 6 contracts (Americas, Calle 80, Norte, Suba, Tunal Sur II and Usme), the purchase and operation of 1181 new buses was awarded and the contract for Americas is still pending. The bidding process for the contract for Americas will take place on December 2018.

## SETP Station- Sincelejo

With the objective of improving life quality of citizens through the Strategic System of Public Transport, the project consist in the technic, legal and financial structuration of the Transferring Station (a building and a basement or two buildings with two basements).

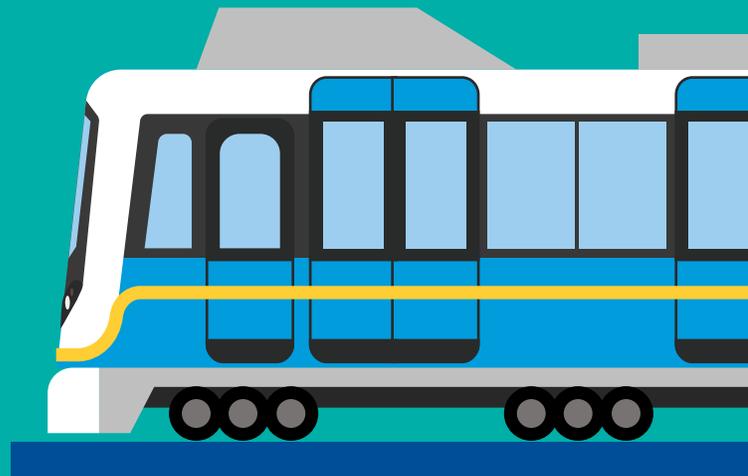
The estimated investment for this project is of approximately USD 17 million. Currently the project is under feasibility phase. And the bidding process start date is scheduled for December, 2018.

### Public Transportation Projects

Project	Phase	Initiative	Million USD
Bogota Metro	Being structured	Public	4,567
Suburban Train - Regiotram	Being structured	Public	523
Intermodal metro stations in Medellin	Being structured	Public	n.a
Transmilenio - Carrera Septima	Being structured	Public	n.a
Transmilenio - Americas	Being structured	Public	283
Barranquilla Tram	Approval	Private	487
SETP Station - Sincelejo	Being structured	Public	n.a
Manizales Strategic Public Transport System	Approval	Public	85

### Other Projects in Formulation

- Ferrocarril del Sur
- Corredor Ferreo del Norte
- SETP Structuration- Soacha
- MetroCali
- SETP Manizales
- La Virginia Logistics Plataform
- Bogota- Zipaquirá Light Train
- Structuring of the services provided by the Cundinamarca Ministry of Transport and Mobility



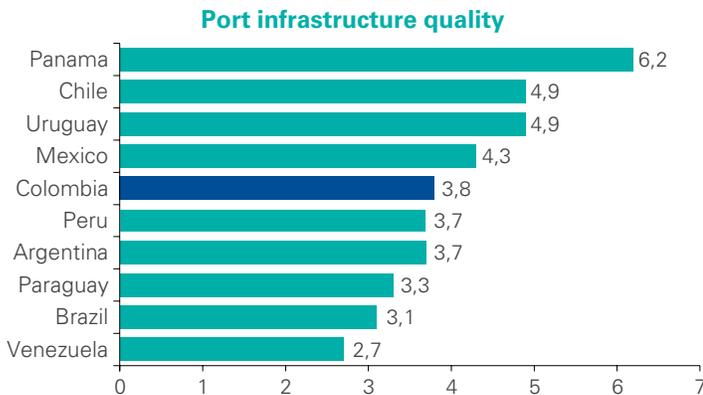
# E. Ports

## Overview

Colombia's Atlantic and Pacific coasts and its geographically strategic location which links Central America to South America gave the country an advantageous position within the Latin American region for sea freight transport.

According to the ranking of countries with the highest port infrastructure quality in The Global Competitiveness Report 2017-2018, by the World Economic Forum, Colombia ranks 77 out of 144 countries.

The Ministry of Transport and the Superintendence of Ports and Transport centralize all Colombian port operations and administrative activities.



Source: The Global Competitiveness Report 2017-2018. The World Economic Forum.  
1 = extremely underdeveloped; 7 = extensive and efficient by international standards

In 2017, Colombia has 10 port areas, 48 granted concessions, five constituted regional port companies, 22 ports that provide public service, 18 for private service (which meet the needs of private companies), eight terminals in development and 33 non-formal terminals, used such as fishing piers, cabotage ports, shipyards and recreational marinas.

According to CONPES No. 3744 of 2013, Colombia's port capacity has reached 302 million tons. According to international standards the total occupancy rate is less than 75%.

### National Port Capacity (million tons)

Port zone	Export	Import	Total
Cartagena	44.1	44.9	89.0
Santa Marta	55.8	5.9	61.7
Barranquilla	6.9	8.6	15.5
La Guajira	35.1	0.6	35.7
Golfo de Morrosquillo	65	0.3	65.3
Turbo	1.5	0.0	1.5
San Andres y Providencia	0.1	0.5	0.6
Buenaventura	7.2	22.7	29.9
Tumaco	2.7	0.0	2.7
<b>Total national Seaboard</b>	<b>218.4</b>	<b>83.5</b>	<b>301.9</b>

45  
concessions

22  
public ports

18  
private ports

9 coastal  
port zones



## Colombian ports Structure

Even though the total occupancy rate of the Colombian ports is in a tolerable level according to international standards (less than 75% of occupancy rate), some of these ports have a deficit capacity. That is the case of the La Guajira, Buenaventura and Santa Marta.

The estimated rate of occupancy according to its cargo is the following:

Port Zone	Containers	Solid Bulk	Coal	Hydrocarbon	Liquid Bulk	Loose Cargo
Cartagena	10%	34%	15%	37%	13%	7%
Santa Marta	26%	74%	72%	87%	67%	57%
Barranquilla	53%	46%	28%	31%	51%	50%
La Guajira	0%	0%	100%	0%	0%	99%
Golfo de Morrosquillo	0%	22%	0%	39%	0%	0%
Turbo	31%	0%	0%	0%	0%	42%
San Andres y Providencia	0%	0%	0%	0%	0%	17%
<b>Total Atlantic Seaboard</b>	<b>13%</b>	<b>42%</b>	<b>76%</b>	<b>40%</b>	<b>17%</b>	<b>25%</b>
Buenaventura	24%	77%	60%	25%	63%	58%
Tumaco	0%	0%	0%	68%	0%	1%
<b>Total Pacific Seaboard</b>	<b>24%</b>	<b>77%</b>	<b>60%</b>	<b>63%</b>	<b>63%</b>	<b>50%</b>
<b>Total national Seaboard</b>	<b>16%</b>	<b>52%</b>	<b>76%</b>	<b>41%</b>	<b>20%</b>	<b>28%</b>

Source: CONPES No. 3744 of 2013

# Opportunities

## Cartagena Port Expansion

The National Environmental Licensing Agency (ANLA) allowed the Associated Ports Company (Compas) to expand its existing maritime terminal in Cartagena. The project consists in the modernization of the port, for new technologies of the port traffic and modification of the capacity.

## Compas Ports Expansion

The government of the Colombian department of Antioquia signed a memorandum for construction. It will cost USD 600 million and the construction had began in April 2018. It will be in Puerto Antioquia, which will be a terminal in Uraba.

Investment (USD)	Phase
USD 600 million	Pre-Construction

## Multiproposal Port

Compas company, in charge of the port operations is realizing a project with the objective of triplicating Tolu and Cartagena capacity in 2020. This project answer the increasing demand presented in both ports. Tolu Port is waiting for a license from Corporacion Autonoma Regional de Sucre (CarSucre). Cartagena Port is under prior consultation.



## 17 New Port Terminals

The government of the Colombian department of Antioquia signed a memorandum for construction. It will cost USD 600 million and the construction had began in April 2018. It will be in Puerto Antioquia, which will be a terminal in Uraba.

Terminal Port Owner	Location	Phase	Initiative	Investment (USD million)	Service
Delta del Rio Dagua	Buenaventura	Conditions granted	Public	246	Container and cargo terminal
Puerto Sungmin	Buenaventura	Conditions granted	Public	2,9	liquid bulk terminals, hydrocarbons and derivatives
Puerto Solo- Pio S.A.S	Buenaventura	Conditions granted	Public	84	Container and cargo terminal. Regasification
Odinsa S.A.	Cartagena	Conditions granted	Public	21	Movement of solid and liquid bulk and hydrocarbons
Prodecop S.A.-TPP	Tumaco	Conditions granted	Public	3,5	Multiproposal terminal
Pisipi S.A.	Turbo	Conditions granted	Public	93	Multiproposal terminal
CCX	La Guajira	Conditions granted	Private	386	Load of carbon
San Antero S.A	San Antero	Conditions granted	Public	275	Container and cargo terminal
Pedro Marquez Cuero	Buenaventura	Under evaluation	Public	n.a	Handling of wood, cement and fishing
Terminales Turisticos del Pacifico	Buenaventura	Under evaluation	Public	n.a	Tourist jetty
Australian Bunkers	Buenaventura	Under evaluation	Public	n.a	Handling of hydrocarbons.
Delcop Colombia S.A.S	Manaure	Under evaluation	Public	n.a	Main service: Salt handling.
Oceanos S.A	Cartagena	Under evaluation	Private	n.a	Fishing services
Arquimedes	Tribuga	Under evaluation	Public	n.a	Multiproposal terminal
Exxon Mobile	Cartagena	Granting resolution received	Private	225.000	Discharge of hydrocarbons for the manufacture of lubricants
Puerto Bahia Colombia de Uraba	Turbo	Granting resolution received	Public	246	Multiproposal terminal
Graneles del Golfo	San Antero	Granting resolution received	Public	22,6	Solid mineral bulks

# 3.2. Fluvial Infrastructure

## Overview



### Overview of Fluvial Concessions in Colombia

The Magdalena River is Colombia's longest most important river due to its length and the proximity to several important commercial nodes within the country. This fluvial system has been largely underused but plays an important role in supporting the isolated communities of the Magdalena Valley, the Amazon, the Orinoco and the Pacific coast, where fluvial transportation, rather than air, is the common means of access.

In relation to the transportation of goods, out of a potential total network of 18,000 Km, nearly 7,000 Km of waterways have permanent navigation. The Magdalena River (1,188 Km) mobilizes most of the cargo by water. The Atrato River basin (1,075 Km) facilitates the link between the Pacific and the Caribbean. In general terms, Colombia lacks infrastructure and the absence of multimodality limits its use and leads the underuse of waterways such as Putumayo and Meta. The Orinoco and Amazon basins (4,800 Km of major navigation),

located on the east and south, are the only forms of communication for many isolated communities; these rivers allow for international communication with Venezuela, Brazil, Peru, and Ecuador.

Additional to the navigability project on the Magdalena river, the government is evaluating the possibility of navigating the Orinoco and Amazonas rivers for commercial purposes, as well as the Pacific estuaries.

# Opportunities

The Magdalena River project aims to improve the navigability of the river and the port infrastructure. The previous contract was made up of the Navelena society, owned by Odebrecht (87%) and Valorcon (13%). The signing contract's expiration was made in April 2017. The new contract was approved by the President of the Republic in March 2018 and includes an investment of USD 1.21 billions.

The new project consists of 4 functional units:

Functional Unit	Distance
1	457 Km
2	195 Km
3	100 Km
4	156 Km

## Close to:

**250 km of channeling**  
**900 km of dredging**

-  Dredging
-  Channeling
-  Main ports in the Magdalena river



Source: DNP and Cormagdalena

# 3.3. Water Infrastructure

## Overview



**Currently Aqueduct Coverage- 91%**  
Rural 73% Urban 97%

**2030 Aqueduct Coverage- 100%**  
Rural 100% Urban 100%

**Daily Consumption**  
Rural Population 42% Urban population 94%

**2030 Daily Consumption**  
Drinking water treatment plants' construction

**Average Coverage (L.A)**  
95% (13th position in L.A)

**2030 Average coverage (L.A)**  
Increase position

**National average of Water Loss**  
43% (Llano and Caribe Regions mostly)

**National average of water loss (2030)**  
Investments focused on loss reduction 30%

**Currently Sewerage Coverage**  
Rural 70% Urban 91%

**2030 Sewerage Coverage- 100%**  
Rural 100% Urban 100%

**Average urban wastewaters treated**  
36% (6th position in L.A)

**Average urban wastewaters treated (2030)**  
100% Wastewaters treatment plants' construction

**Total Investment by 2030  
USD 14.5 Billions**

Source: DNP

# Opportunities

## Water and Sewerage Services in Colombia

The city of Santa Marta faces serious deficiencies in the provision of water and sewerage services, mainly due to the following factors: i) the existing sources of drinking water do not meet the city's demands and since 2012 the service's continuity has been affected by the drought, affecting its sourcing; ii) the city faces losses due to inefficient operation and maintenance of the aqueduct; iii) 10% of the population is not covered; iv) during 2013 the water supplied was unfit for human consumption; v) during 2014 there have been problems with service continuity; vi) nominal metering coverage reaches only 73.1%; vii) the sewerage service coverage is 76% and is insufficient to service the city's needs. Additionally, the city lacks a system to collect rainwater.

In order to create a PPP project for the aqueduct of the city of Santa Marta, the DNP is under the process of structuring the financial, legal, and technical aspects of the project. On June 20, 2018 the Mayor of Santa Marta filed the response to the observations made by the Ministry of Housing, City and Territory.

The project will include the design, construction, operation, and maintenance of the water and sewage systems for the city of Santa Marta. It seeks to improve the coverage and quality of wastewater management and clean water supply.

### Canoas Wastewater Treatment Plant Construction

The project consist in the decontamination, adequacy and conservation of Bogotá river basin through the construction of phase I and II of Canoas wastewater treatment plant. Also the project includes de phase II design.

Currently the initiative is under feasibility stage and the bidding process start expectation is for the remaining 2018 year.

Source: DNP

### Water and Sewerage Projects

Proyecto	Ciudad	Total Financing Amount (USD million)	Phase
Canoas lift station of wastewaters treatment plant	Bogota	111	Bidding process
Canoas wastewater treatment plant construction	Bogota	8	Structuration
Wastewater treatment plant construction	Chiquinquirá	4	Under operation
Tunja's wastewater treatment plant construction and Chicamocha river decontamintaion	Tunja	3	Under operation
Wastewater treatment plant construction- Phase I	Sogamoso	3	Under operation
Wastewater treatment plant construction- Phase II	Tulua	3	Under operation
Wastewater treatment plant construction- Urban zone	Santander de Quilchao	3	Under construction
Wastewater treatment plant construction- La Marina	Armenia	6	Under operation

Proyecto	Ciudad	Total Financing Amount (USD million)	Phase
Wastewater treatment plant extention and modernization- Rio Frio	Giron	16	Structuration
Salitre wastewater treatment plant extention	Bogota	410	Under construction
PTAR rios Otun-Consota construction	Pereira	84	Structuration
Santa Marta's aqueduct	Santa Marta	75	Structuration
Increased rain sewer coverage	San Andres	19	Under construction
Works in the aqueduct system (treatment, adduction, conduction and catchment)	Puerto Colombia	18	Structuration
Master plan for urban aqueduct and sewerage	Bucaramanga - (Velez)	11	Under construction
Wastewater treatment system construction	Malambo	10	Under construction
Wastewater collector system	Ibague	15	Feasibility
Master Plan for Rural Sewerage	Valledupar	254	Feasibility
Sustainable urban drainage system	Santa Mara	920	Feasibility

Source: Minvivienda, Findeter

# 3.4. Social

Law 150 of 2012 was issued in Colombia as the legal framework for PPPs. One of the main objectives of this law was to achieve the implementation of PPPs in different sectors, including social infrastructure as well as productive infrastructure. However, since the issuing of this law, the government has awarded more than 30 road concessions, and only one social infrastructure project.

Thus, it is important to understand the importance of the implementation of PPPs in the social infrastructure sector, given the existence of a significant deficit of social infrastructure in Colombia:

Colombia has a 20-year lag in infrastructure and the social environment is also lacking progress. Given the current situation, the Colombian government has been developing various social infrastructure projects since 2012 under Law No. 1508. Investment in social infrastructure in Colombia has become a priority in the public agenda given the need to close the existing gaps in infrastructure projects and public services.



## Current Deficit

- **51,134** school classrooms
- **9,4%** quantitative deficit for housing
- **81,548** hospital beds required



## Estimated Investment Required

- **USD 2.5 billion** for education
- **USD 31,34 billion** for housing
- **USD 19.18 billion** for healthcare

Source: DNP

# A. Healthcare

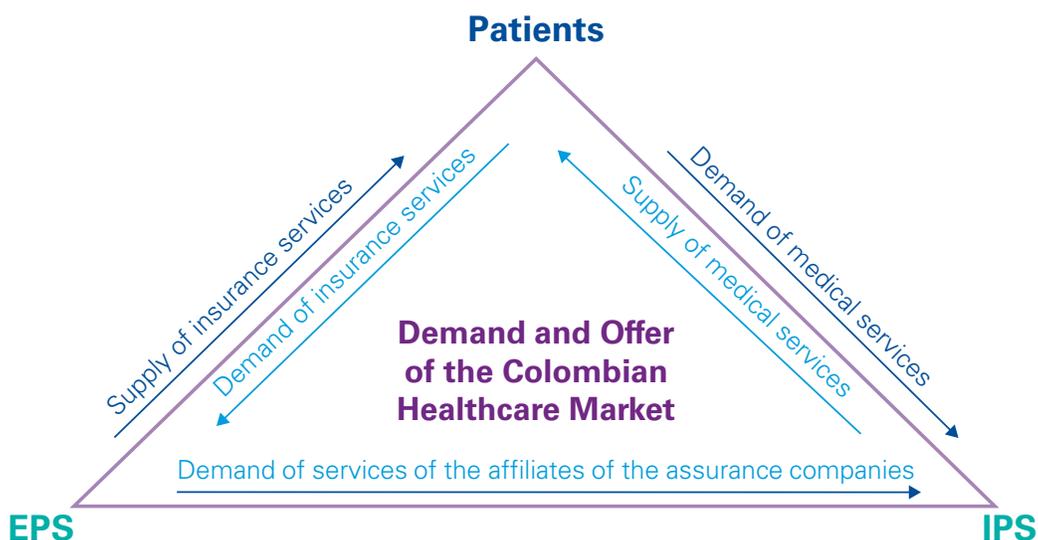
## Overview

The Colombian healthcare model has been defined for Social Security with public-private integration, and two insurance regimes: subsidized, for those with no capacity to pay, and contributory, for those in the formal economy and the self-employed sector, who have capacity to pay.

The Colombian system is one of the most decentralized anywhere. It is decentralized in structure, both vertically (from the state to the insurer and the provider), and horizontally, between

the various agents that form it. With this structure, the greatest vulnerability comes from fragmentation and the interaction between agents, so that's where the State has a key role.

There are three main agents in the Colombian healthcare system market for supply and demand, namely: patients (consumers), insurers (EPS – Empresa promotora de salud), and healthcare service providers (IPS – Institución prestadora de salud). The relationship between these three agents is shown below.



As observed above, there are two principal actors in the Colombian system, who represent the demand for services: i) patients that go to the providers to request health services; and ii) the insurers (EPS), who are the principal purchasers of services. In Colombia there is universal insurance, which refers

to the fact that all residents of Colombia must be affiliated to the social security system. Nonetheless, the system faces a challenge because of the lack of connection between the functions of public health service providers (IPS) and those of insurance providers (EPS).

Source: DNP



Investment in healthcare infrastructure is also expected to pick up given the new demands on the SGSSS. In 2017, Colombia had 2 doctors and 1.5 hospital beds per 1,000 inhabitants, according to the ACHC (Colombian Association of Hospitals and Clinics) report, occupying the position 48 of the ranking with an index of 80.6 out of 100, evaluated on 99 countries of the world.

A serious shortage of beds, the quest for more effective management with quality as a benchmark, poor planning and erratic political decisions all need to be considered when analyzing public hospital services and infrastructure in Colombia. The urgent need for resources to finance better services and public health infrastructure, without incurring in a significant burden on the country's fiscal budget, has led Colombia to seek private sector participation in in two areas of hospital management: financing and operations.

However, Colombia boasts a modern private healthcare system, located on the major cities. Expats can buy health insurance from a variety of local or international providers. The private healthcare

## Opportunities

In order to improve social infrastructure and provide better services in Bogota, Colombia a modernization program for the hospital infrastructure was presented in the 2018 PPP health forum. According to the latest update, Usme Hospital and Santa Clara Hospital tendering will be deliver at February 2019, and Bosa Hospital will be tendered on March 2019. These projects will present the following characteristics:

Hospital					
Hospital's Name	Number of Beds	Approximate Area	Benefited Population	Contracting Method	CAPEX (estimated)
Usme Hospital	221	36,200 m2	367,201 people	Traditional procurement (turnkey contact)	USD 78 million
Bosa Hospital	215	27,600 m2	411,149 people	PPP scheme (Law 1508)	USD 72 million
Santa Clara new Hospital and CAPS*	312	28,000 m2	360,000 people	BOMT**	USD 136 million

\*CAPS: Primary attention health center  
 \*\* BOMT: Build, operate, maintain and transfer

Source: Secretaria Distrital de Salud; Exchange rate used for currency conversion 2.984 COP/USD

**The PPP project** will include design, construct, provide and maintain furniture, and provide administrative services (cleaning and surveillance). Also, the traditional procurement contract will include design and construct, and provide furniture. And finally, BOMT incorporate design, construct, provide and maintain furniture, and cleaning and surveillance services.

Also, according to Secretaria Distrital de Salud, there are other two hospitals that also will be tendered on 2019: La Felicidad Hospital and New Maternal and Child Institute.



# B. Education

## Opportunities

The Ministry of Education of Colombia is currently working on implementing the National Infrastructure Plan for Education (NEIP). This plan seeks to support the implementation of a single shift for daily school hours. The main barrier for this implementation is the deficit of classrooms, which amounts to about 51,000. Currently, in 2018 the Ministry of Education of Colombia made the design and executed the construction of about 51,134 new and improved classrooms. So far, currently there are approximately 22,802 delivered or under construction.

In order to make PPP projects feasible in the education sector, the DNP conducted a study with the purpose of: "Analyzing the application of Public Private Partnerships (PPPs) for the execution of projects that involve design, construction, rehabilitation, improvement, and equipment, as well as the operation and maintenance of the educational infrastructure (primary, secondary, and higher education)." The education sector has the same limitation on authorized future funds for PPP project payments as the justice sector (0.004% of Colombia's GDP).

Additionally, the IFC, the Financiera Nacional de Desarrollo (FDN), and the World Bank will advise the Ministry of Education in structuring two Public Private Partnership (PPP) projects of packages or groups of schools in seven different locations in Colombia: Barranquilla (city), Cartagena (city), Medellin (city) and Soacha (municipality), Ibaguè (city), Antioquia (department) and Bogota (city).

**PPP projects** will reduce classroom deficit, achieve extensions in coverage and go ahead with the school-day plan through an APP project that carries out the construction, provision, operation, maintenance and lending of non-pedagogical services.





The name of the first project is Phase I and the second one is Phase II. Both projects involves, in total, the construction, endowment, operation, maintenance and non educational services for a total of 70 schools in Colombia. The exact locations for the schools are the following:



### Phase I

- **Medellin:** 15 schools
- **Barranquilla:** 8 schools
- **Cartagena:** 5 schools
- **Soacha:** 8 schools

Est. Investment (USD million)	Phase	Type of Initiative
203	Under approval (Cartagena is under feasibility)	Public



### Phase II

- **Antioquia:** 24 schools
- **Ibague:** 10 schools
- **Bogota:** undisclosed

Est. Investment (USD million)	Phase	Type of Initiative
180	Feasibility	Public

# C. Public Buildings

## Opportunities

Among the main objectives established by the 2014-2018 National Development Plan, the government is planning a significant investment in the development of infrastructure for public buildings. This section presents the current most important opportunities in this sector.

### Ciudadela Judicial

The project of Ciudadela Judicial for the capital of the country seeks to gather, in a single complex, several corporations and dependencies of the sector that faces great limitations of area and location, by means of the construction of new facilities in an area of 130,000 squares in Paloquemao sector. The Superior Council of the Judiciary (CSJ) is preparing the project.

Est. Investment (USD million)	Phase	Type of Initiative
156	Feasibility	Public

Source: DNP

### CAN Urban Renewal

The Virgilio Barco Vargas National Real-estate Agency was established in Colombia with the purpose of “identifying, promoting, managing, and executing urban renewal and development projects in Bogota and other cities throughout the country as well as to build or manage, by means of public private partnerships or civil works, property destined for national order official entities or any other supplementary uses which the project could have.” The agency is currently responsible for the project “Ciudad CAN.”

The National Administrative Center (CAN, in Spanish), located in Bogota, is where many government institutions have their headquarters including ministries, public educational institutions, and national institutions. The “Ciudad CAN” project seeks to group the actual CAN complex with its neighbor properties, covering an area of approximately 87 Ha. Currently, according to DNP, the Agency has structured and is looking for a developer of the first phase of “Ciudad CAN” project, which involves the construction of the new CAN’s first building, consisting of three towers.

“Ciudad CAN” is now a project of urban renewal and development which contemplates the demolition of the majority of the existing buildings in order to create a city piece with mixed ground uses, dense in height in order to liberate green spaces and pedestrian spaces and where official buildings contribute to efficiency in citizen service. It also seeks to recuperate its hierarchy and symbolism, which were lost with the fragmented development of the current CAN. The project’s scope includes—in addition to the official headquarters—housing, trade, culture, and others. This project will be implemented under a PPP scheme.

Est. Investment (USD million)	Phase	Type of Initiative
125	Under approval	Public

Source: DNP



## Nivel Central II Paloquemao

The PPP for the Project Central Level II - Paloquemao, with an area of around 80,000 square meters, would be carried out in the same place which previously housed the Security Administration Department building. The Office of the Attorney General of Colombia (FGN) is preparing the tender of the project.

Est. Investment (USD million)	Phase	Type of Initiative
83	Feasibility	Public

Source: DNP

## Cali Branch of The Office of the Attorney General of Colombia

The Prosecution General Office branch in the city of Cali currently operates from seven different locations throughout the city, managing different departments in each point. The Prosecution General Office is looking to establish a single site for its headquarters in Cali. This will be accomplished by means of a PPP contract for the construction, management, operation, and maintenance of the new offices of the Prosecution General Office. The construction will cover an area of approximately 56,545 m2, including parking areas, and an area of approximately 754 m2 for commercial premises. The concession period for this contract will be of 15 years (operation) + 1.5 years (construction). The Office of the Attorney General of Colombia (FGN) is preparing the tender of the project.

Est. Investment (USD million)	Phase	Type of Initiative
98	Feasibility	Public

Source: DNP

## Cali Branch of The Office of the Attorney General of Colombia

In recent years, prison policy in Colombia has been aimed almost exclusively to increase quotas. Since the year 2000, approximately COP 3.5 trillion (USD 1.4 billion approx.) have been invested in construction, improvements, operation, and maintenance of the National Order Reclusion Establishments (NORE). Even though this investment has allowed for the duplication of the State's capacity to attend to the liberty-deprived population, the rate of overcrowding rates in Colombia still remains above 50%.

The new approach of the Colombian prison policy seeks the creation of a link between a coherent and effective crime policy. Additionally, the construction of new NORE's under a PPP scheme is expected to be completed before 2019, generating approximately 7,200 new quotas, according to CONPES No. 3828 of 2015.

The potential new projects in this sector are the following:

Project	Phase	Est. Capacity	Est. Investment (USD million)
Barrancabermeja	Feasibility	2,500	170
Uramita	Feasibility	2,000	220
Popayan	Feasibility	3,500	143

Source: DNP

These projects are public initiatives for the restoring the rights of inmates and provide necessary spaces for resocialization activities in the face of prison overcrowding of more than 60% in the country.

The Popayan prison project is the most advanced, although there is not an established date for its tender process.

## Museums

In 2013, the Ministry of Culture launched the Museum Strengthening Program (MSP) which focuses on the museums owned by the Ministry that are located outside Bogota. This plan involves a PPP project developed by the Ministry, which contemplates the strengthening of museums and the development of programs with 8 Museums owned by the Ministry of Culture in the cities of Cartagena, Santa Fe de Antioquia, Villa de Leyva, Honda, Villa del Rosario, Popayan (2) and Ocaña.

Est. Investment (USD million)	Phase	Type of Initiative
10	Under approval	Public

Source: DNP

## San Jose Galleon

Develop the scientific project for the recovery of the San Jose Galleon. Today There is a proposal that meets the highest standards scientific, technological, and financial resources required for the knowledge of cultural heritage.

Est. Investment (USD million)	Phase	Type of Initiative
n.a	Bidding	Private

Source: DNP

# 3.5. Energy

## Overview

Colombia's energy sector has evolved significantly over the past 20 years and today it is an efficient sector with world class practices. This trend will continue in coming decades due to the growth of foreign direct investment in Colombia as well as the growth of Colombian multinationals abroad.

Colombia's energy sector currently has a public-private agenda aimed at ensuring the country's supply of electricity in the medium and long-term and at positioning Colombia as a major player in regional energy integration.

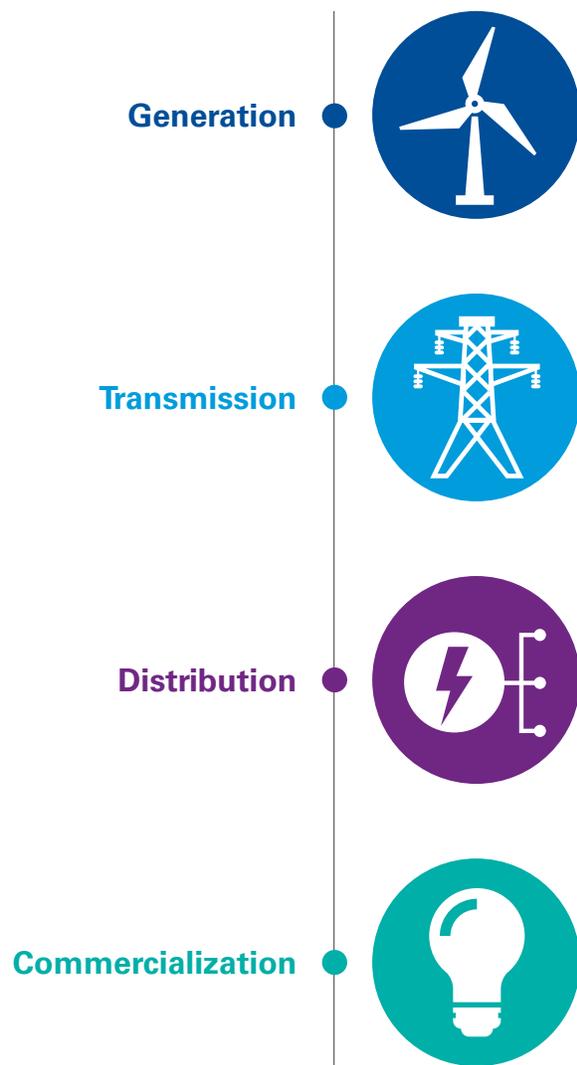
The new Government regulation encourages the creation and usage of long term PPA\* contracts (10-20 years) and allowing for more innovative ways of project financing in the long term (Project finance).

The electricity sector in Colombia consist in different entities that are dedicated to each of the activities necessary for the provision of electric service.

For the National Development Plan, these are the main objectives related to the energy sector:

- Electricity sector
- Increase electricity access and quality.
- Encourage electricity generation based on unconventional renewables energies such as solar, wind biomass, small hydropower and geothermal energy.
- Foster energy efficiency.
- Boost new international power interconnections, specially the interconnection Colombia –Panama.
- Expand energy trade with Ecuador and Venezuela.
- Use Colombia's energy experience to gain leadership in international organizations and as a tool to improve bilateral cooperation, seeking to advance the Andean Interconnection System.

\*Power Purchase Agreement

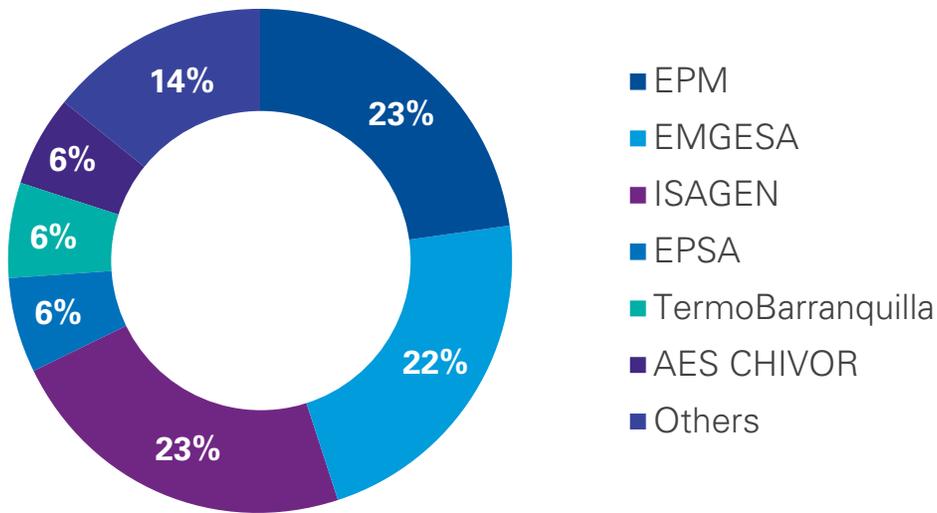


Colombia's energy sector became a free market in 1994 in all of its subsectors (generation, transmission, distribution, and retail). Also, Colombia established the energy exchange to increase competitiveness among players for the benefit of the end user. In Colombia, the difference between transmission and distribution is defined by the level of power being handled. As such, transmission refers to power equal or above 220 kV (bulk) and distribution relates to power below 220 kV.

The Colombian government implemented a free market policy (Law No. 142 and No. 143 of 1994) with the following objectives:

- Increase competitiveness among generators using two mechanisms: establish long-term contracts between producers, large consumers and retailers, with the energy stock exchange, in which producers (supply) and retailers (demand) participate.
- Allow all transmission and distribution companies to interconnect in order to create a larger network.
- Entice private companies and investors to invest, in order to increase the level of technology and innovation in the energy industry.
- Release the public sector from assuming investments in the energy sector.
- Capture potential of profits from energy exports by increasing the capacity and reduce the risk of reliability from hydroelectric resources which comprise 75% of the capacity of the generators.
- Reduce the energy loss through constant renovation of the distribution network.
- Increase energy coverage in rural and urban areas.

### Market Share of Energy generators in Colombia, 2017



  
**Main figures of the energy market**

-  Electricity consumption, 2017(f) **66,893 GWh**
-  Electricity Generating Capacity, 2017(f) **66,667 GWh**
-  Electricity consumption per capita, 2017(f) **1,208 KWh**

Source: Informes anuales

## Energy Projects

Current Energy Projects	Stage	Investment USD
Hidroituango Hidroelectric (EPM)*	Construction	11.4 billion
Serena del Mar	Construction	36 million
Solar Farm Santa Rosa de Lima	Construction	n.a
<b>Plan5Caribe (Celsia)**</b>		
<ul style="list-style-type: none"> <li>• Cuestecitas Substation/ Extension Rihoacha, Maicao substations</li> <li>• Manzanillo Substation/ Extension Bayunca - Bolivar substation</li> <li>• Nueva Monteria -Cordoba substation</li> <li>• Extension Valledupar- Cesar substation</li> <li>• 110 kV North substation/ Extension Nueva Barranquilla. Atlantico substation</li> <li>• Caracoli substation/ Extension Malambo, 20 de Julio substations</li> </ul>	Construction (Plan5Caribe)	172 million

\*Empresas Publicas de Medellin (EPM) informo el estudio y evaluacion de eventuales ventas de participaciones en empresas controladas y no controladas.

\*\*Celsia issued a Public Offer for Shares (OPA) in 2017.

## Renewable Energies

With the growing demand for energy, a strong commitment to reduce carbon emissions, new advances in technology, greater incentives for investment and continued policy support, renewable energy will play an increasingly important role in the global energy matrix for the XXI century.

Historically, the projects in the energy sector in Colombia have been largely dominated by a few local players with either hydroelectric or thermoelectric plants. Other energy sources in the country, such as solar or wind, are relatively new and are still under study. Given that 70% of the electric resources of Colombia are represented by hydroelectric energy, it is of high importance that the country develops new sources of energy like solar, wind biomass, small-hydropower, and geothermal energy for strengthening the energy market and reducing the level of dependence on water, avoiding the negative effect of "El Niño" phenomena.

The government has been focused on promoting the development and use of unconventional sources of energy, mainly those of a renewable nature. The government has taken the first steps to seek investment in alternative sources through Law 1715 of 2014 and Decree 2143 of 2015, establishing tax incentives for research, development and investment in projects of this nature in the country. This law raises the foundations of a tacit strategy under a competitive market approach, which is to create instruments, some of which require particular developments (regulatory instruments) while others are defined in the same standard (tax incentive instruments).

# Opportunities

Studies carried out on the country by the Mining and Energy Planning Unit (UPME) forecast for the year 2030 a consumption of 30% of non-conventional clean or renewable energies and 70% of conventional sources (hydroelectric and thermal).

For the generation of energy, in the Registry of Current Projects (RPV), exists 563 initiatives of the Mining and Energy Planning Unit. Among these, 140 are conventional (127 hydrological and 13 thermal) and 423 non-conventional (385 photovoltaic, 17 biomass and 21 wind).

## Energy Generation Initiatives

Project	Energy Capacity (MW)	Investment (USD million)	Phase
La Chorrera PCH	18	50	Structuration
Chorreritas PCH	20	55	Structuration
Pore PCG	16	38	Structuration
El Abejorro PCH	8	22	Structuration
Hidroarquia PCH	10	30	Structuration
Encalichadas PCH	10	25	Structuration
Talasa	170	430	Structuration
Hidroarma	174	330	Structuration

The UPME is public biddings for the national and regional transmission system:

## Energy Transmission Announcements

Project	Energy (kV)	Investment (USD million)
Second Ocaña Transformer	500/230	n.a
Third Sogamoso Transformer	500/230	n.a
Sabanalarga – Bolivar	500	n.a
Collector Substation	500	n.a
Valledupar Transformer Bay	220	n.a
Bosque Transformer Bay	220	n.a
Copey Transmission lines	500	n.a
El Rio New Substation	220	n.a
San Juan New Substation	220	n.a
Toluviejo	220	32
La Marina New Substation	110	95
Valledupar Third Transformer	220/34.5	n.a
Altamira Second Transformer	230/115	15
Altamira - Florencia - Doncello 2nd Circuit	115	n.a
Sabanagrande	n.a	35

# Secondary Market

## Electricaribe Sale

Electrificadora del Caribe S.A. E.S.P. (Electricaribe) is dedicated to the distribution and commercialization of electric power in Colombia. The firm serves 2.5 million residential, industrial and commercial customers in the seven coastal departments.

In 2016 the government intervened Electricaribe due to bad performance services. Since then, Superintendencia de Servicios Públicos (SSPD) has been the owner.

Seller	Investment USD	Timing
Superintendencia de Servicios Públicos (SSPD)	n.a	The sale is scheduled for July, 2018.

## Promigas S.A Disposal of Assets

Promigas S.A. E.S.P. engages in the transmission and distribution of natural gas and electrical power in Colombia and Latin America.

EEB GAS SAS will launch the process of transferring its stake equivalent to 15.64% of the share capital in Promigas S.A. E.S.P.

Seller	Investment USD	Timing
EEB GAS SAS	n.a	[Unknown]

## Shares Sale in Transelca

Government has presented their interest in selling their participation in Transelca. Transelca is a mixed public services company, which provides electric power transport services.

Seller	Investment USD	Timing
Ministerio de Hacienda	n.a	[Unknown]

## EPM Disposal of Assets

Grupo EPM brings together a group of companies from Colombia, Central America, the Caribbean, South America, Mexico, the United States and Spain. EPM focuses on designing and executing projects in various sectors.

According to the established infrastructure investment plan, EPM directors' board authorized the disinvestment (disposal of shares) of EPM Group in controlled and non-controlled companies in Colombia and abroad: The disposal of Interconexión Eléctrica S.A participation (10.17%), indirect shares in Aguas Antofagasta S.A (100%), Parque Eólico Los Cueros Ltda (100%), as well as some non-material minority shares.

Seller	Investment USD	Timing
Empresas Públicas de Medellín	USD 1.07 billion (COP 3 billion)	The sale will conclude on second half of 2019

Source: El espectador, Revista Dinero, Bloomberg, Bnamericas, EPM



## Renewable Energy Projects

Project	Company	Description	Location	Status
<b>Wind Power</b>				
Study of wind power potential	Isagén	Installed capacity of close to 400 MW. The required infrastructure for the construction and operation of the wind farm has been identified	Atlántico and La Guajira	Feasibility studies
Wind power park la Guajira	Isagén	Two towers have been installed for evaluation of the wind potential of the area	La Guajira	Feasibility studies, procedures with regional and environmental authorities
<b>Hydroelectricity</b>				
Cañafisto	Isagén	Advanced environmental and area of influence studies. Installed capacity of 937 MW	Antioquia	Development of environmental studies and socioeconomic risk
Piedra del Sol 156	Isagén	Fonce River analysis, that would provide an installed capacity of 156 MW	Santander	Currently in environmental licencing process
Rio Patía 1650	Isagén	Currently four projects being studied in the Patia River with installed capacity of 1,650 MW	Cauca and Nariño	Technical and economical prefeasibility study stage is concluded, currently in environmental studies
Andaquí 687	Isagén	Caqueta River project, with planned installed capacity of 687 MW	Cauca and Putumayo	Being reviewed for environmental matters
Hydroelectric Ituango	EPM	Hydroelectric project with capacity of 2400 MW power with eight turbines	Río Cauca, Antioquia	Currently in construction
<b>Geothermal Energy</b>				
Macizo Volcánico del Ruiz	Isagén	The project is in environmental procedures, an exploratory drilling phase is now being developed	Caldas	Pre-feasibility studies completed in environmental licensing procedures
Binacional Tufiño - Chiles - Cerro Negro	Isagén	Currently under exploration project. Isagen has social relations with affected communities and it has initiated geological and topographical studies	Colombian - ecuatorian frontier	Prefeasibility studies in progress, in Ecuador and Colombia. In environmental studies procedures

# Opportunities

The Colombian Mining and Energy Planning Unit- UPME established the deadlines for the first long term electricity contracts auction. It is important to mention that this tenders allows for the participation of non- conventional technologies.

- 1** • **Application deadline for the connection concept**  
(28-Sept-2018)
- 2** • **Publication of final tender specifications and final report on the PPA**  
(1-Nov-2018)
- 3** • **Publication of final decisions**  
(9-Nov-2018)
- 4** • **Establishment of parameters for pre- classification and classification of bids**  
(13-Nov-2018)
- 5** • **Notification to bidder enable to submit a sale or purchase bid**  
(17- Dec- 2018)
- 6** • **Validation of antitrust conditions and tender**  
(2- Jan -2018)
- 7** • **Tender results forwarded**  
(8- Jan -2018)
- 8** • **Execution of contracts**  
(14-Jan-19)



# 3.6. Oil & Gas

## Overview

According to the Oil and Gas Journal (OGJ), Colombia had approximately 1.7 billion barrels of proven crude oil reserves at December 2017. This shows an increase of 7% compared to the number of barrels in reserve that were held in 2016. Colombian Officials estimate that, at present production levels, the current oil reserves would last about six year approximately.

Much of Colombia's crude oil production occurs in the Andes mountains and the eastern Amazonian jungles. The Meta department is also an important area of production, mostly heavy crude oil.

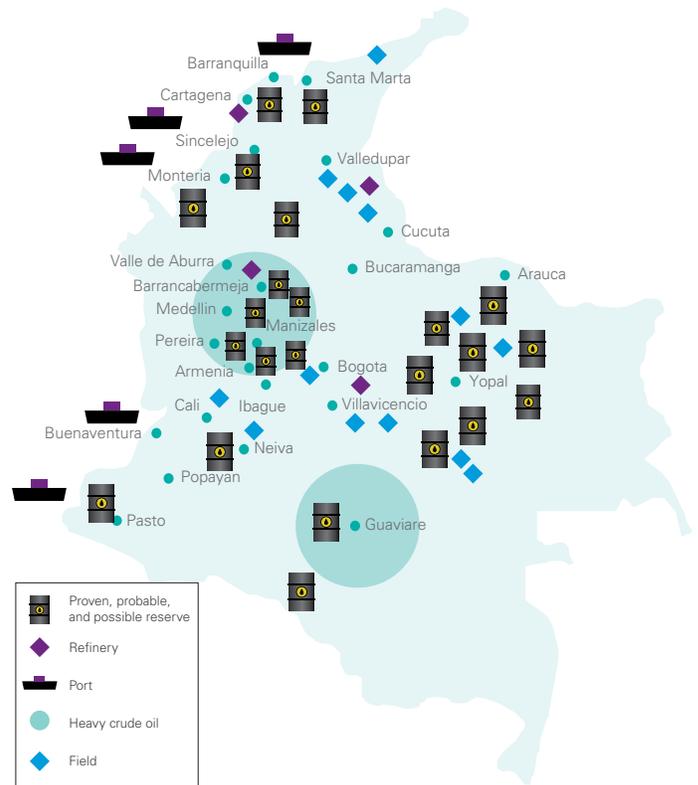
There are approximately 190 oil and gas service companies operating in Colombia. According to the Superintendencia de Sociedades, 89% of oil and gas companies (both E&P and services) operating in Colombia are located in Bogota and its region.

Oil production in 2017 reached 853 BPD\*. The goal for 2020 is to reach 1.5 million BPD.

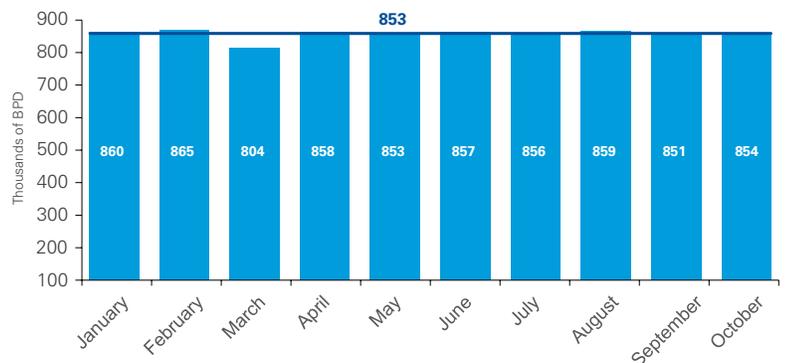
The gas services industry in December 2017, has grown by an average of 6% as of 2016, reaching sales of 908.7 million cubic feet per day (mpcd).

The chart below represents the average oil barrels produced per day for each month of 2017.

\*Barrels per day



Average monthly BPD production (2017)



## Oil Pipelines in Colombia

Ecopetrol, a state owned company, is responsible of the oil transportation and refining in Colombia. In some cases, Ecopetrol is the owner and in other cases, Ecopetrol has the majority of the participation. Ecopetrol created CENIT in 2013, a new company focused on oil transportation.

The government implemented a partial privatization of the state oil company to revive its upstream oil industry. However, after a half-decade of moderately safe operations, attacks on oil and natural gas pipelines have augmented. Extended oil production will require reserves discoveries and enhancements on infrastructure safety.

### Energy Generation Initiatives

- **Caño Limon – Coveñas:** used for oil transportation from Caño Limon, Arauca to Coveñas, Cordoba. Length: 770 Km.
- **Alto Magdalena:** oil transportation from the superior valley of the Magdalena valley (Dina, Huila) to Vasconia, Antioquia. Ecopetrol owns 49%, of the pipeline.
- **OCENSA:** transports oil from Cusiana, Casanare to Coveñas, Cordoba. Length: 790 Km.
- **Colombia:** connects the Vasconia station with Coveñas. Length: 481 Km.
- **TransAndino:** has a capacity of 190,000 BDP and transports oil from Colombia's Orito field in the Putumayo basin to Colombia's Pacific port of Tumaco.

Source: Ecopetrol- Mapa Infraestructura Petrolera.

## Infrastructure Details

Currently the oil infrastructure system consists in Crude Petroleum Pipeline, Multi- Product Pipeline and Propane pipelines. The table below shows the amount of pipelines per category until 2018:

Description	Owned by Ecopetrol	Others	Total
Crude Petroleum Pipeline	2,847	2,620.0	5,467
Multi- Product Pipeline	3,078	28.0	3,106.0
Propane Pipeline	381	-	381
<b>Total</b>	<b>6,306</b>	<b>2648</b>	<b>8,954</b>

# Opportunities

Increase the recovery factor that indicates the amount of hydrocarbon resources that can be carried to the surface to be a reserve. This recovery factor can be increased with the optimization of deposits by companies and investment in research for the improvement of the recovery factor processes. Ecopetrol aims to double production in Akacias field in 2018.

Construction of a regasification infrastructure in Puerto de Buenaventura, seeking to begin its execution in 2021. The bidding process started on August, 2018.

Project to modernize the refinery of Barrancabermeja to increase the demand for goods and related industry services.

The country is preparing to begin exploring offshore sites that have a great potential, on the Pacific and Atlantic oceans.

The Colombian Petroleum Association (ACP in Spanish) indicated a 67% increase in exploration and exploitation investments in 2017 and estimated an increase in the budget for 2018. In 2017, 54 exploratory wells were drilled (3 times the amount of the year 2016).

Increase in investments: Ecopetrol is planning to invest USD 3.5-4.5 billion, mainly for exploration and new technologies. This includes an approximate USD 300 million of investment in offshore exploration. And introduction of fracking in Colombia.

Also, there are projects underway to improve the country's oil-related infrastructure as well as future projects:

- Pacific oil pipeline project: 450,000 BPD capacity, 1,400 Km of oil pipeline to transport the product for its sale along the pacific coast (2018–2020).
- Ocesa P-5 (Delta 35): Expansion capacity to 750.000 BPD (late 2018).
- Extension of Caño Limon-Coveñas: Increase transport capacity till 250,000 BDP.
- Magdalena Medio 100 project: Increase oil transport from Ayacuch to Coveñas by 25,000 BDP.

# 3.7. Mining

## Overview

Colombia has the largest coal reserves in Latin America and is the fifth largest coal producer in the world. Colombia has large reserves of iron ore, nickel, gold, and copper. It is also a small yet significant producer of Platinum Group Elements. Silver and emeralds are also excavated. In Latin America, Colombia is ranked first for coal, second for nickel, and sixth for gold and copper production. Colombia is also the second largest exporter of emeralds in the world.

In 2017 Colombia's mining sector made USD 12,000 million in exports, showing an increase of 35% besides 2016.

The mining sector in Colombia is classified as a primary and secondary market. The first one is granted by the National Mining Agency (ANM). The agency's role is to grant mining licenses to explore and produce, in exchange for royalties and other benefits to the communities the mines interact with. In the past year, the granting of licenses has been withheld until the agency assumes on the role of regulator. The secondary market is for those mining operators that have been granted a mining license but are interested to divest, sell part of their ownership or farm out completely.

Colombia's most important challenges in exploration and production are those related with environmental and community licenses.

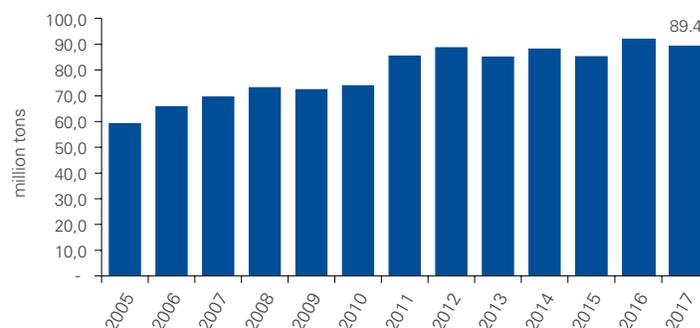
In 2017, Colombia's coal represents 10% of world trade, placing the country as the largest coal producer in Latin America, and the 11th in the world. The largest producers are China, U.S., India, Australia, South Africa, Russia, Indonesia, Kazakhstan, and Poland. Cesar region delivers 60% of coal production, while La Guajira delivers 36% of the amount. In 2016, the country's coal production reached a historical amount with 90,5 tons.

After coal, which accounts for 80.2% of the country's mining production, nickel and gold are the most representative

Colombian mining products in international markets. Colombia is the 11th largest nickel producer in the world (produced 69.5 million pounds in 2017) and is the 15th largest gold producer in the world, and the 4th largest producer in Latin America. In 2017, Colombia produced 41.06 tons of gold.

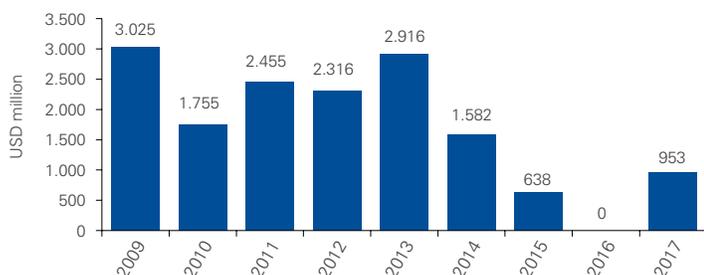
Mining Production Forecast		
	2018	2019
Coal (million tons)	1150	152
Nickel (000's tons)	51	51
Gold (tons)	87.4	88.5
Construction material (000's tons)	15	16

### Coal production

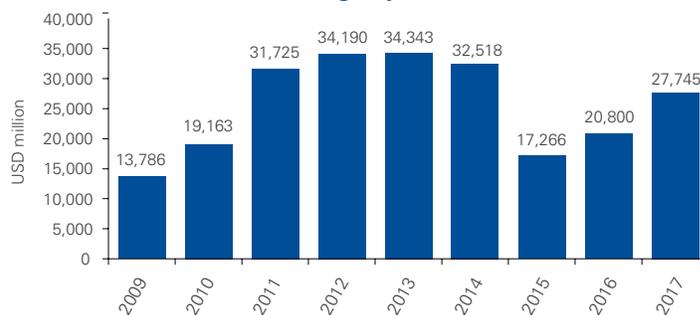


However, total mining exports have increased in recent years. On average, from 2009 to 2017, mining exports have increased 14.04% and Foreign Direct Investment in mining has had a growth of 56.2% from 2015 to 2017, with USD 640 million in 2015 and USD 1,000 million in 2017.

**Foreign Direct Investment - Mining**



**Mining exports**



**Some Mining Companies with Presence in the Country**

Company	Subsidiary in Colombia	Mineral	Country of Origin
BHP Billiton	Carrejon - Cerromatoso	Coal and Ferronickel	Australia
Anglo American	Carrejon	Coal	South Africa
Xstrata	Carrejon	Coal	Switzerland
Barrick	Sorotama	Gold	Canada
Anglo Gold Ashanti	N/A	Gold	South Africa
Drummond	N/A	Coal	United States
Glencore	Prodeco	Coal	Switzerland
Votorantium Group	Paz del Rio	Iron and Coal	Brazil
Bz Gold	Gramalote	Gold	Canada
Gran Colombia Gold	N/A	Gold	Canada
Continental Gold	N/A	Gold	Colombia
Holcim	N/A	Building materials	Switzerland
Mineros S.A.	N/A	Gold and precious metals	Colombia
CEMEX	N/A	Building materials	Mexico

Source: ANIM Banco de la Republica and DANE, Atlas Media, El economista

# Opportunities

In Colombia, mining is carried out by the private sector and its development has had a profound impact on the participation of important foreign investors such as Drummond (USA), Anglo American Coal (UK), and CEMEX (Mexico), among others who have executed large scale projects. By 2017, there were 8,880 mining titles in 29 of the 32 departments of Colombia.

Colombia has a privileged location from a metallurgical, geological perspective. It has two major geotectonic provinces: the "Cinturon Andino" and the "Escudo Amazonico," both

ideal for the mineral exploration and projects that have a great economic importance.

Currently, there are several opportunities in projects of Gold and Copper. There have been building two gold mines that expect to achieve an upgrade of 37% of production. The complete plan expects to built four gold mines.

## Some Mining Companies With Presence in the Country

Company	Project Stage	Mineral	Expectations
Antioquia Gold	Enviromental license obtained	Gold	30,000 onz
Continental Gold	Building phase will be reached this year	Gold	3.7 million onz (gold)- 10.7 million onz (silver)
Gramalote	Enviromental license obtained	Gold	5 - 7 million onz
Red Eagle Mining	95 exploration holes have been made	Gold	1.9 million tons
Anglo Gold Ashanti	Pre-feasibility study	Copper	n.a
El Roble	Expansion studies	Copper	1.58 million tons of mineral resources
Minera Cobre	Exploration phase	Copper	n.a
Minerales Cordoba	This year exploration reaches pre-feasibility	Copper	500 million tons

# Secondary Market

## Drummond Shares Sales

Drummond is one of the biggest Colombian coal export company engaged in services of extraction, processing and sale of coal and its derivatives. Actually the company is evaluating a new sale of part of its assets. Drummond hired Goldman Sachs to evaluate its assets and evaluate the possibility of selling them. The next step is the structuration of the sale process.

Seller	Investment USD	Timing
Drummond	n.a	[Unknown]



4.

KPMG

# KPMG Worldwide Infrastructure

KPMG is one of the world's leading companies in financial advisory concerning financing and capital structure for infrastructure projects. KPMG has established a global infrastructure team specialized in transactions that include both the public and the private sectors. Within a general framework, our business is divided approximately 50/50 between advisory services to public entities and private companies. Our offices are located in the most active financial markets including the United States, Canada, the United Kingdom, Portugal, France, Spain, the Netherlands and Australia; we also have a great presence in Latin America, mainly Mexico, Brazil, Chile, Colombia and Peru.

Our Global Infrastructure team has over 500 professionals located strategically around the world with experience in the financial, banking, and public sectors. This figure amounts to 3,000 when including other areas of KPMG that also participate in the infrastructure projects. In this way, we provide appropriate solutions in various contexts, from a global perspective, and structure and finance projects using our global knowledge for each particular situation. The basis of KPMG's professional excellence is our professionals and the experience acquired in infrastructure project financing. Such experience spans over 25 years of services among various sectors, geographies, and contexts.

Our involvement includes highway projects, bridges, railway, airports, ports, water supply and sanitation, education, health, information technology, defense, power, and natural resources. Currently, our KPMG teams in Latin America are providing advisory in pre-feasibility analysis, market analysis, procurement and financing, financial structuring and unsolicited proposals, due diligence and mergers and acquisition services as well as capital raising for funds in various projects. After a year of global successes, innovation, network-wide collaboration, hard work and growth, KPMG has received multiple awards in 2017 from recognized entities in the market.

These awards reflect our excellence and achievements in infrastructure advisory throughout the world, across our member firms and inclusive of all our related service offerings. They truly acknowledge the global nature of our business and celebrate the holistic value we bring to our clients through our diverse industry expertise and deep sector knowledge.



# KPMG Advisory roles

We also consider the particularities of the various cash flows involved in the project, taking into account the different currencies and the facilities for handling each in domestic and foreign markets.

KPMG has the support of professional personnel in tax and accounting related issues, to adjust the structure to the local legislation and to the available possibilities in the market.

Our objective is to support the client in the investment to be made, accompany the investor throughout the different required stages, and efficiently structure the financing that would lead to a financial close within an optimal time-frame.

Integrated Advice across the Asset Lifecycle				
Strategy & Development	Procurement & Financing	Delivery & Construction	Investment	Operations & Performance
<p>Planning, feasibility, and business case development</p> <ul style="list-style-type: none"> <li>• Clarity of needs, objectives, and constraints.</li> <li>• Strategy, policy and regulatory formulation, and planning.</li> <li>• Infrastructure plans.</li> <li>• Feasibility assessment.</li> <li>• Risk analysis.</li> <li>• Funding options analysis.</li> <li>• Business Case/ Investment Case development.</li> <li>• Procurement strategy advice and options analysis.</li> </ul>	<p>Bid structuring and creating value for money</p> <ul style="list-style-type: none"> <li>• Advice on tender process.</li> <li>• Commercial structuring.</li> <li>• Request for tender and tender response documents.</li> <li>• Funding strategies and procurement of financing.</li> <li>• Development of contractual documentation.</li> <li>• Financial modelling.</li> <li>• Negotiation of commercial terms.</li> <li>• Contractual and financial close.</li> <li>• Development of tax efficient structures.</li> <li>• Stakeholder engagement.</li> <li>• Privatisation.</li> </ul>	<p>Achieving efficiency in construction</p> <ul style="list-style-type: none"> <li>• Monitoring and control of risks, costs, and benefits.</li> <li>• Governance and contract management.</li> <li>• Operational readiness assessment and assistance.</li> <li>• Project oversight.</li> <li>• Project management.</li> <li>• Tax capital allowances maximisation.</li> </ul>	<p>Maximising value in the secondary market</p> <ul style="list-style-type: none"> <li>• Investment/divestment of infrastructure assets.</li> <li>• Tax planning and structuring.</li> <li>• Financial, tax, pensions, and operational due diligence.</li> <li>• Assessments.</li> <li>• M&amp;A Advisory.</li> <li>• Pensions.</li> <li>• Investment strategy.</li> <li>• Refinancing.</li> <li>• Restructuring.</li> <li>• Audit of funds and project companies.</li> </ul>	<p>Achieving positive performance</p> <ul style="list-style-type: none"> <li>• Asset management.</li> <li>• Cost takeout.</li> <li>• Contract monitoring.</li> <li>• Tax compliance.</li> <li>• Change of ownership due diligence.</li> </ul>



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