

# DOING INFRASTRUCTURE IN BRAZIL



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# **DOING INFRASTRUCTURE IN BRAZIL**



The recent downturn in the Brazilian economy slowed down the country's productive sector, significantly impacting the competitiveness of the industry in strategic areas such as infrastructure.

In a country with 13.2 million unemployed, investing in infrastructure is one of the most effective ways to warm up the economy and create jobs. The shortage and deficiency in terms of supply, quality and accessibility to infrastructure is largely due to poor investment in the sector, with an average of 1.5% of GDP invested in the last two years. On the public side, this amount reached only 0.4% of GDP in 2018 - the lowest level in the last 10 years.

Just to keep the current infrastructure assets, investments would be necessary in the order of 3% of GDP per year and, to modernize and expand the infrastructure it would be essential to invest over 4% of GDP per year. To reach this level, it is paramount to increase the participation of private sector, both national and foreign, in the investments and operation of infrastructure services.

The Federation of Industries of the State of São Paulo (FIESP) and the Center of Industries of the State of São Paulo (CIESP) emphasize the importance of partnerships between the public and private sectors as a foundation for the resumption of growth and development, giving the private sector the role of allocating the necessary resources, bringing technological innovations and a more efficient management model. Such initiative directs the private sector to perform what is proven it does better and preserves the Government's role as a development inducer - responsible for planning, regulation and supervision of infrastructure services.

FIESP and CIESP believe that the infrastructure will require billions of Reais in new investments in the coming years and reaffirm their commitment to the country's development by launching the "Doing Infrastructure in Brazil". The guide aims to help foreign investors enter the sector, identifying business opportunities and legal, regulatory and institutional peculiarities in the Energy, Logistics & Transportation, Telecommunications, Sanitation and Mining industries.

### **Paulo Skaf**

*President of the Federation of Industries of the State of São Paulo, Fiesp, and of the Center of Industries of the State of São Paulo, Ciesp*

## **FEDERATION OF INDUSTRIES OF THE STATE OF SÃO PAULO**

Located in the most industrialized Brazilian state, the Federation of the Industries of the State of São Paulo (Fiesp) is the largest entity representing the interests of the industrial sector in Brazil. Fiesp has 131 trade associations as members, comprising approximately 150,000 companies of all sizes from the most diverse industries.

The state of São Paulo has a population of more than 45 million people and a per capita income of R\$ 1,898/month. If considered as a country, São Paulo would be the third economy in Latin America, after Brazil and Mexico.

Due to its privileged size and representativeness, Fiesp is the main speaker of the industrial sector vis-à-vis the Brazilian government. The Federation works very closely with the public sector on many issues in order to advocate policies, strategies and actions aiming at promoting the competitiveness of the Brazilian industry, as well as inbound and outbound investments.

In order to achieve these objectives, Fiesp has been focusing on strategic industries through special committees and departments, in sectors such as agribusiness and agrofood industry, defense, technology, infrastructure, construction, and oil & gas.

## **CENTER OF INDUSTRIES OF THE STATE OF SÃO PAULO**

The Center of Industries of the State of São Paulo (Ciesp) is the largest representative entity of the industrial sector in Latin America and acts as the voice in defense of the industry of São Paulo. It aims to strengthen industrial activity, defend industry interests and meet the needs of its members, as well as encourage relationships and generate business opportunities.

As a reference in the resolution of local demands, since it has capillarity throughout the state of São Paulo - through its regional, municipal and district directories -, it influences important decisions for the industry, stimulates discussion and demands better conditions for the productive sector and for the development of the country.

Its continuous struggle brings positive impacts to the whole Brazilian society, with actions developed at regional, state and national levels.



## **MADRONA ADVOGADOS**

Promoting an ethical environment in business and investing in training people are two of the great challenges of our time. An increasingly integrated world, with ever more advanced technologies, requires that any organization stand for transparency, tolerance for diversity, and respect for differences, companies, and people. Madrona Advogados was launched with that spirit. With a focus on corporate law, mergers and acquisitions, capital markets, financial law, and infrastructure, in addition to a strong performance in tax, anticorruption, real estate, arbitration, civil litigation, labor law and antitrust, our motivation is to understand our time, invest in people, and work so that our clients reach their goals, always with ethics and responsibility. With a team of more than ninety legal professionals with great experience and recommended by several national and international publications, the members of Madrona Advogados are aligned with the principles and objectives that we set out to achieve. We want to be among the most admired firms and seek to be a reference to our peers, associates, and employees. Our greatest challenge is to grow sustainably, keeping our focus on our team's high technical quality and ethical standards – provide our clients with excellent service is the outcome.

### **SHORT NOTE**

Madrona Advogados' work is completely in line with this new wave of Brazilian infrastructure, advising local and foreign clients to seize all these opportunities with responsibility, efficiency and transparency. By teaming up with Fiesp and Alvarez & Marçal, we expect to give an even greater contribution to this scenario, by contributing to "Doing Infrastructure In Brazil". We hope this information helps those interested in unlocking additional investments in Brazilian infrastructure sector.

The Brazilian infrastructure landscape is rapidly shifting to ensure legal certainty and to foster investments. Attracting foreign investors' interest is paramount in this process and the government has already begun to address some of the regulatory barriers, aiming at opening our market and expediting economic development in Brazil. It is expected that there will be multiple opportunities to keep the infrastructure market busy in the upcoming years.

## **ALVAREZ & MARSAL**

Provides global leadership, problem solving and value creation for companies across industries and around the world. We work as advisers, interim leaders and partners who tell you what you need to know, not always what you want to hear. Over the past thirty-five years, A&M has grown from three employees to over 3,000 in 55 offices across 24 countries in North America, Europe, Asia, Latin America and the Middle East, making the firm one of the largest privately-held global professional services firms. A&M attributes its people to this tremendous growth. The firm continues to recruit top talent, enabling it to respond to shifting market demands and expand its service lines across geographies such as U.S., U.K., Brazil, Mexico, France, China and the Nordics.

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# 1. BRAZIL MACRO OVERVIEW

- Recently, the elected government has promised to refund Brazil's economy through radical austerity reforms which brings a positive outlook for the country's economy.
- Brazilian economy is on the verge of having a robust growth after a long period of recession.
- **GDP growth:** Investors foreseen growth opportunities in the country due to:
  - Low levels of interest rate;
  - Stabilized inflation;
  - Tax cuts;
  - Privatizations.
- **Privatizations:** Government has defined a very broad agenda of privatizations that should improve fiscal aspects of the country in the short-term and increase the long-term competitiveness. To do so, fiscal consolidation and the productivity agenda needs to be addressed because these reforms will make sure that the country is on a sustainable development path.
- **Social Security reforms:** The main problem of the Brazilian Public Finance has been addressed through a bill that adjusts the Social Security System, which is the biggest offender in terms of public spending. The approval process needs legislation changes and should take at least the first semester of 2019.
- **Unemployment rate:** still not reflecting the improvement in GDP and successive records in exports.
- **Stock Exchange:** Foreign investors are awaiting the reforms to invest about R\$ 30 billion in the Brazilian Stock Exchange and R\$ 36 billion in Private Equity funds in the next 12 months and this will accelerate the M&A and IPO Markets. The stock market has begun to react with the real odds of Congress passing the law.
- **Capital Markets:** expected to generate opportunities for local and foreigners' companies in Brazil.

## **1.1. BRAZIL - SNAPSHOT**

Brazil is the 6<sup>th</sup> most populous country and the 9<sup>th</sup> biggest economy in the world with a projected GDP in 2019 of US\$ 2 trillion and a GDP per capita of US\$ 15,600. Its economy represents almost 40% of Latin American and Caribbean.

The country has an area of 8,5 million km<sup>2</sup> and is the 5<sup>th</sup> biggest country in the world, Brazil has a population of 210 million people with median age of 32.4 year, the country has a labor force of 104 million workers.

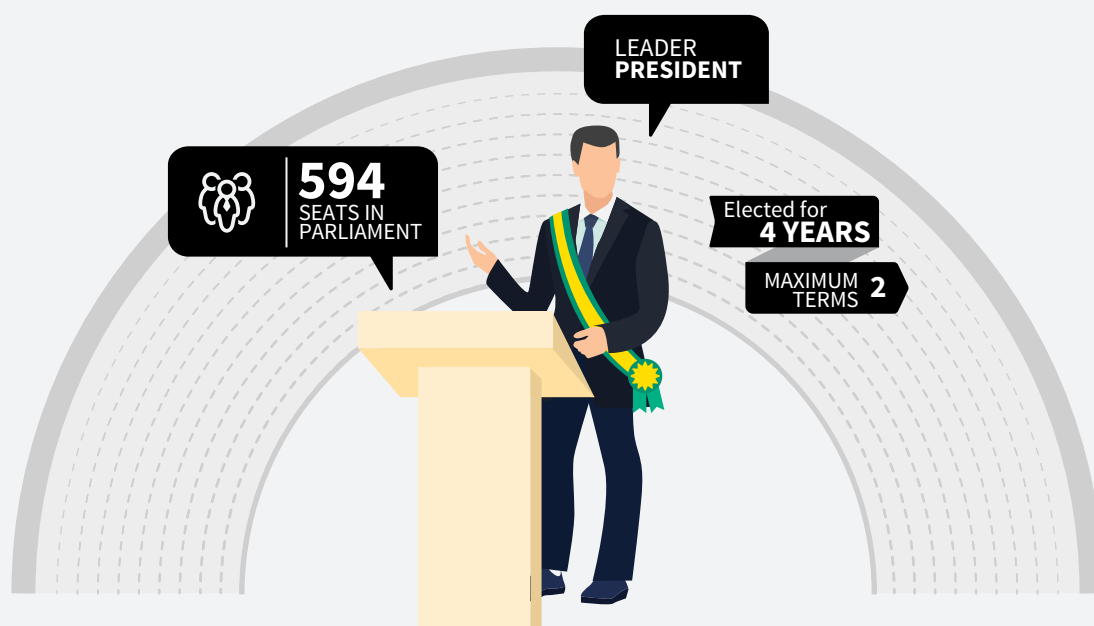
Brazil has US\$ 378 billion of international reserves and its main importers partners are China, US, Argentina and Germany. The main exported products are coffee, soybeans, wheat, rice, corn, sugarcane, cocoa, citrus, beef, textiles, shoes, chemicals, cement, lumber, iron ore, tin, steel, aircraft, motor vehicles and parts, other machinery and equipment.

## **1.2. GOVERNMENT IN BRAZIL**

Brazil is the 4<sup>th</sup> largest democracy in the world with almost 150 million registered voters. The Federal Government of Brazil is the national government of the Federative Republic of Brazil which was formed in 1889. The Brazilian Federal Government is divided in three independent branches:

1. The Executive, which is headed by the President and the cabinet.
2. The Legislative, whose powers are vested by the Constitution in the National Congress.
3. The Judiciary, whose powers are vested in the Supreme Federal Court (consists of 11 judges) and lower federal and state courts.

## Brazilian Government Structure



The country has 594 seats in the parliament in a Bicameral structure with 81 in Federal Senate (Senado Federal) and 513 seats in the House - Chamber of Deputies (Camara dos Deputados).

The country has Universal Suffrage since 1934 with a majority voting type in its general election. In 2018, using the electronic voting process Mr. Jair Bolsonaro was elected president.

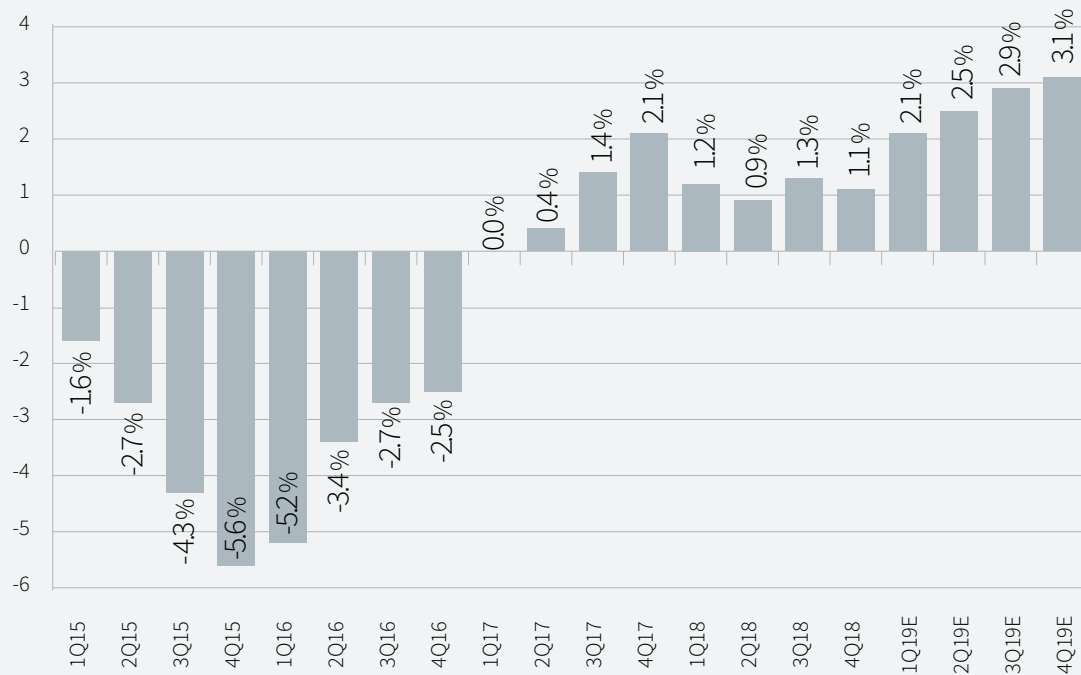
### 1.3. BRAZILIAN MACROECONOMICS OVERVIEW

After several quarters of recession, the economy is going up due to low levels of interest rate, stabilized inflation and expectancy for reforms. In 2019, GDP recovery should continue, led by household consumption and investments.

With idle capacity still in place, inflation ought to remain in lower levels during the next quarters. Besides that, fiscal policy should create a less volatile currency exchange environment.

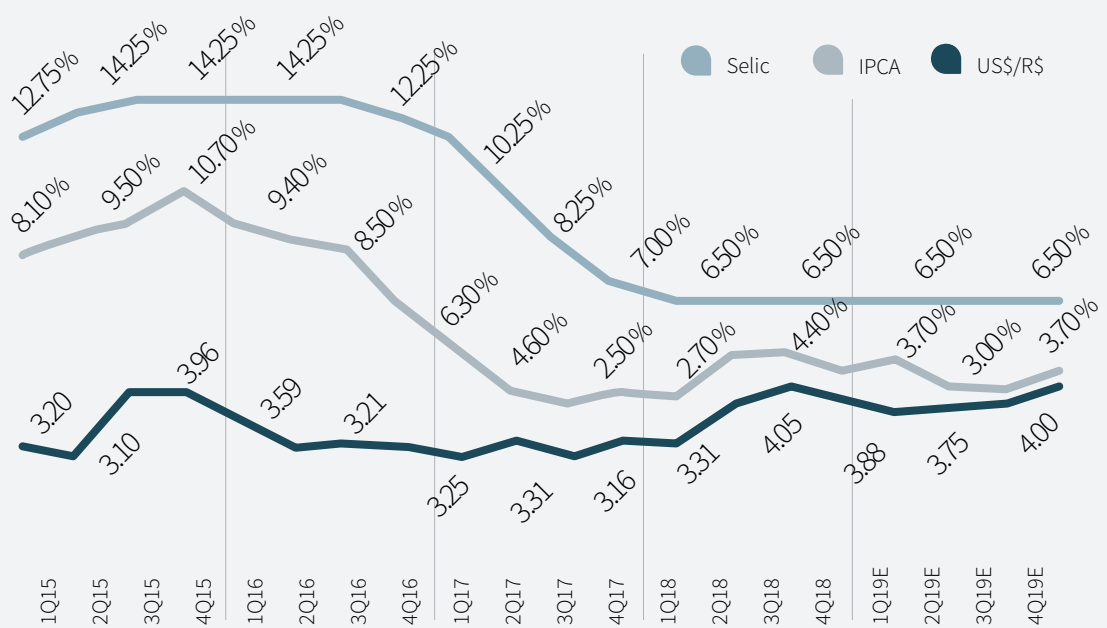
In a scenario with low and stable inflation, Brazilian Central Bank will be able to conduct a gradual normalization of monetary policy.

## Gross Domestic Product | Quarter YoY



Source: Bloomberg

## US\$, IPCA\* and Selic \*\* | Quarter

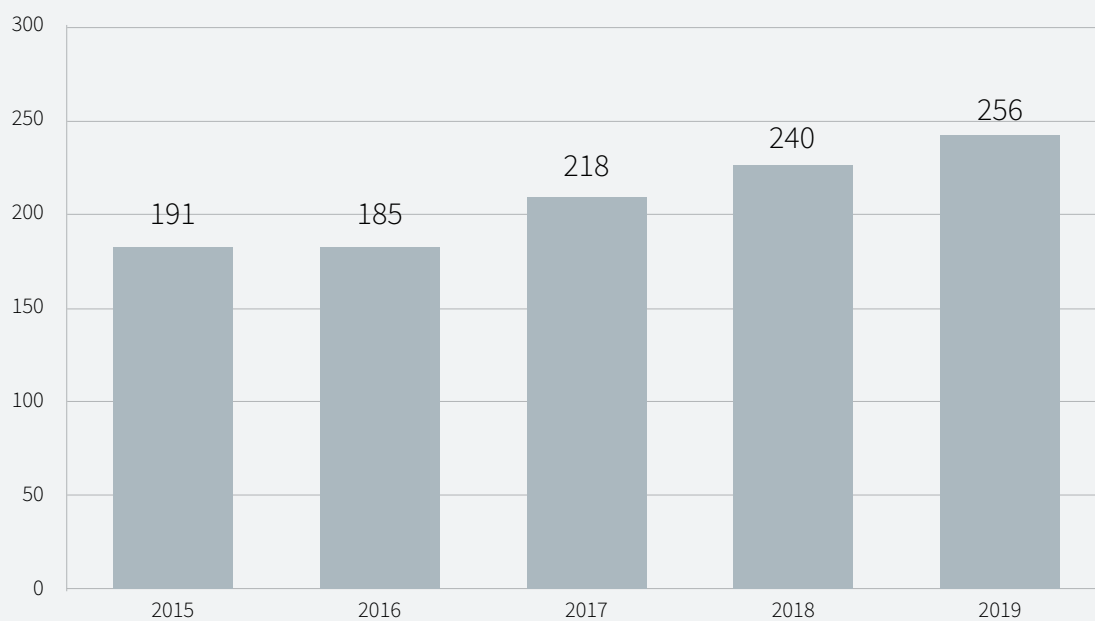


Source: Bloomberg\*, Santander\*\*, Itaú BBA\*\*\* and A&M Analysis

### 1.3.1. EXPORTS

Exports in 2018 were driven by basic and manufactured goods (soybean, iron ore, crude oil, raw sugar, etc.) and reached the highest level in 5 years. In 2019, exports' growth should remain strong and could reach R\$ 256 billion, which is very close to 2011 figure, R\$ 261 billion (highest level in country's history).

#### Total Exports in US\$ Billion



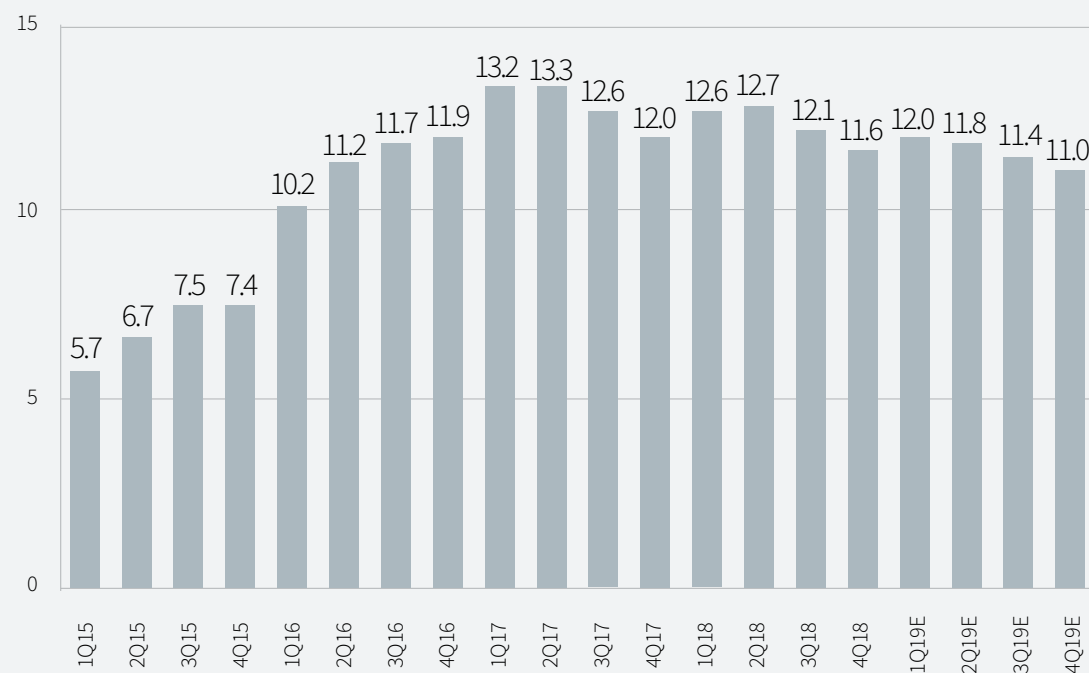
Source: Bloomberg and OEC



### 1.3.2. UNEMPLOYMENT

However, even with the improvement in GDP and successive records in exports, the unemployment rate is still very high. As the newly government is trying to improve the labor market conditions, the economy activity should resume, accelerating the consumer consumption which will help the economy and will attract investments.

#### Unemployment Rate as % of the Population

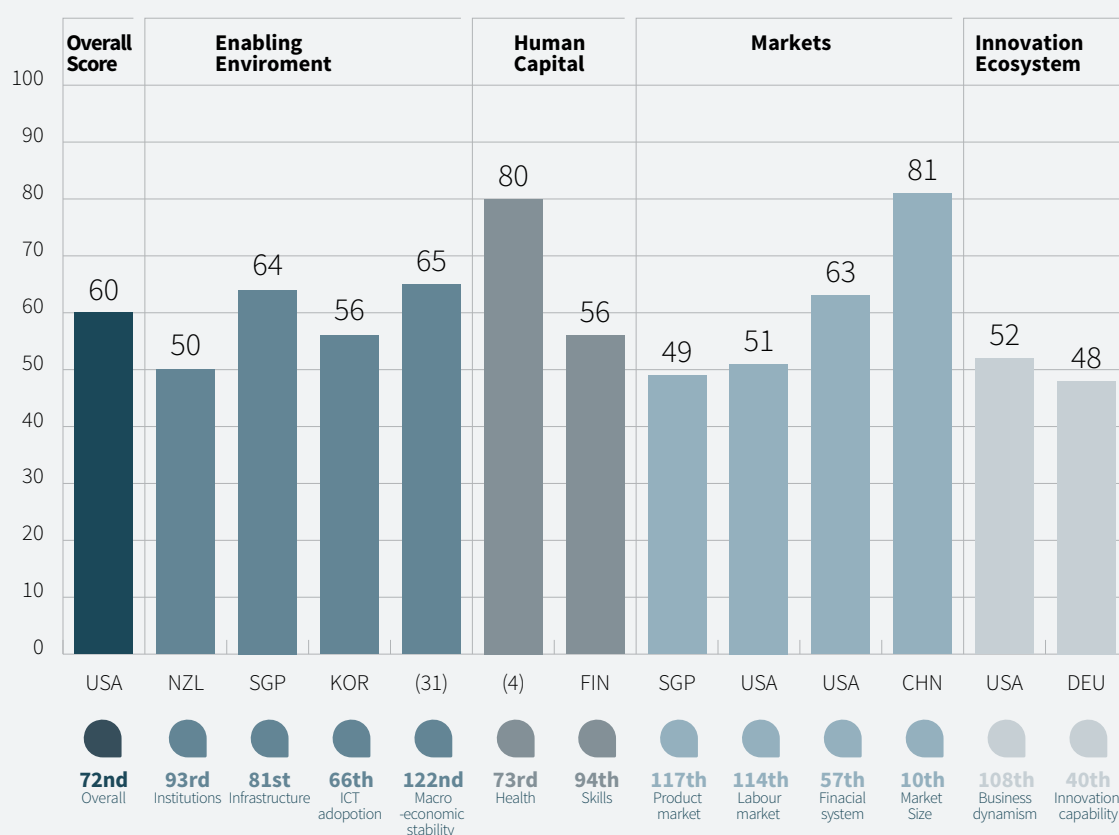


Source: Bloomberg

## 1.4. MACROECONOMIC AND FISCAL REFORMS

In the 2018 Global Competitiveness Index, Brazil fell three places to 72<sup>nd</sup> place out of 140 countries. The country's low productivity is explained by a combination of factors as are presented in the graph below. Being the 9<sup>th</sup> largest economy in the world while the 72<sup>nd</sup> place in the Competitiveness ranking shows that there are many opportunities for changing the country, that is why the current agenda is based on structural reforms.

**Global Competitiveness Index 4.0 2018 edition**



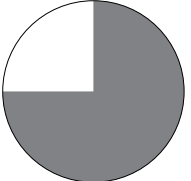
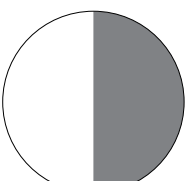
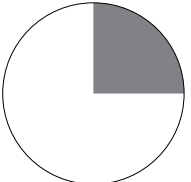
Source: National Treasury, World Economic Forum, Credit Suisse

Among the main measures needed to create a favorable competitive environment are:

1. the tax reform;
2. the opening of Brazilian economy to trade;
3. the competitiveness of the banking system, privatizations; and
4. education reform.

To address these issues, Government has defined a very broad agenda of privatizations, ranging from infrastructure to finance, that should improve short-term financials as increase the long-term competitiveness.

### Privatization Agenda

Sector	Asset	Probability of Approval
Logistics & Transportation	Airports	
Logistics & Transportation	Postal Service	
Logistics & Transportation	North-South railroad	
Logistics & Transportation	Grains railroad	
Other	LOTEX	
Energy	BR Distribuidora	
Logistics & Transportation	Port Authorities	
Logistics & Transportation	Toll roads	
Logistics & Transportation	Infraero	
Telecommunications	Empresa Brasil Comunicação	
Energy	Hydropower Plants	
Energy	Eletrobras	
Logistics & Transportation	West-East Railroad	
Finance	BNDES PAR	
Finance	Brazilian Mint	
Energy	Petrobras refineries	
Energy	Furnas	
Finance	Caixa	
Finance	Banco do Brasil	
Finance	BNDES	
Finance	Regional banks	
Mining	Various Mineral deposits	
Telecommunications	Telebras	

Source: Credit Suisse

## 1.5. SOCIAL SECURITY SYSTEM

The Brazilian social security system deficit was R\$ 321 billion in 2018 and will be R\$ 351 billion in 2019, mainly due to the rural and urban pensions that correspond to 62% of the total deficit. The biggest offender is the Rural Retirement System, since it presents the highest deficit and one of the lowest incomes of the retirement system as shown below:

**Brazilian Social Security System (billions of R\$)**

Types	2018			2019		
	Revenue	Spending	Deficit	Revenue	Spending	Deficit
Urban RGPS	381	463	-82	408	510	-102
Rural RGPS	10	124	-114	11	127	-116
RPPS	34	85	-51	36	90	-54
Military	2	21	-19	3	23	-20
Subtotal	427	693	-266	458	750	-292
BPC	0	55	-55	0	59	-59
Total	427	748	-321	458	809	-351

Source: Ministry of Finance

The Brazilian Pension System five main categories:

1. RPPS is the Public Employees Retirement System.
2. The Rural RGPS is the system applied to those who are not public servant and have already worked in the Rural sector.
3. The Urban RGPS is used by private sector workers who don't have access to the Rural RGPS.
4. The military have their own system according to Brazilian law.
5. The Brazilian pension system also has a specific category for Elderly and Disabled People called BPC.

The government knows that the main offender of the public spending is the retirement system and has prepared a proposal to change that. The planned economy with the new social security system is in the order of R\$ 1.1 trillion in the first 10 years. The approval process needs legislation changes and should take at least six months to be completed.

### Major changes in the New Social Security System

The proposal also modifies the minimum retirement age for RGPS schemes - from 60 years to 62 years for women and 60 years to 65 for men. The RPPS system changes from 55 years to 62 years for women and 60 years to 65 years for men.

When it comes to aliquots changes the RGPS is the system that withstands a major change since the highest percentage is above 16.79% while in the present system this value is 11.68%.

### Current Social Security System

Current Social Security System		
Monthly Income Ranges	RGPS	RPPS
Up to R\$ 1,751.81	8%	11%
From R\$ 1,751.82 to R\$ 2,919.72	9%	11%
From R\$ 2,919.73 to R\$ 5,839.45	11%	11%

### Major Changes in Social Security System

Major Changes in Social Security System		
Monthly Income Ranges	RGPS	RPPS
Up to R\$ 998	8%	8%
R\$ 998.01 – R\$ 2,000	7.5% - 8.25%	7.5% - 8.25%
R\$ 2,000.01 – R\$ 3,000	8.25% - 9.5%	8.25% - 9.5%
R\$ 3,000.01 – R\$ 5,839.45	9.5% - 11.68%	9.5% - 11.68%
R\$ 5,839.46 – R\$ 10,000	11.68%	11.68% - 12.86%
R\$ 10,000.01 – R\$ 20,000	11.68%	12.86% - 14.68%
R\$ 20,000.01 – R\$ 39,000	11.68%	14.68% - 16.79%
Above R\$ 39,000	11.68%	+ than 16.79%

Source: Ministry of Finance

To approve this bill, the president has sent it to congress and it will go through two commissions in the House before it can be voted.

#### 1) Constitution, Citizenship and Justice Commission (CCJC) of the House

This commission analyzes the relation of the proposed bill with the fixed clauses of the Brazilian constitution. The content of the bill is not discussed, only if it respects the fixed clauses or not.

To get approved the proposal must have 34 votes out of 66.

#### 2) Special Commission

After going through the CCJC, it is formed a special commission to discuss the full content of the proposal. Congressmen can change parts of the text before subjecting it to a new voting within the special commission.

To get approved the proposal must have 33 votes out of 65.

### 3) House

After being voted in the Special Commission, the proposal will be sent to the House. As it is an amendment to the constitution, it is submitted to two rounds of voting and to be approved it must have 308 votes out of 513 deputies, in both rounds.

### 4) Constitution and Justice Commission (CCJ) of the Senate

This commission analyzes the relation of the proposed bill with the fixed clauses of the Brazilian constitution and it is also discussed the full content of the proposal.

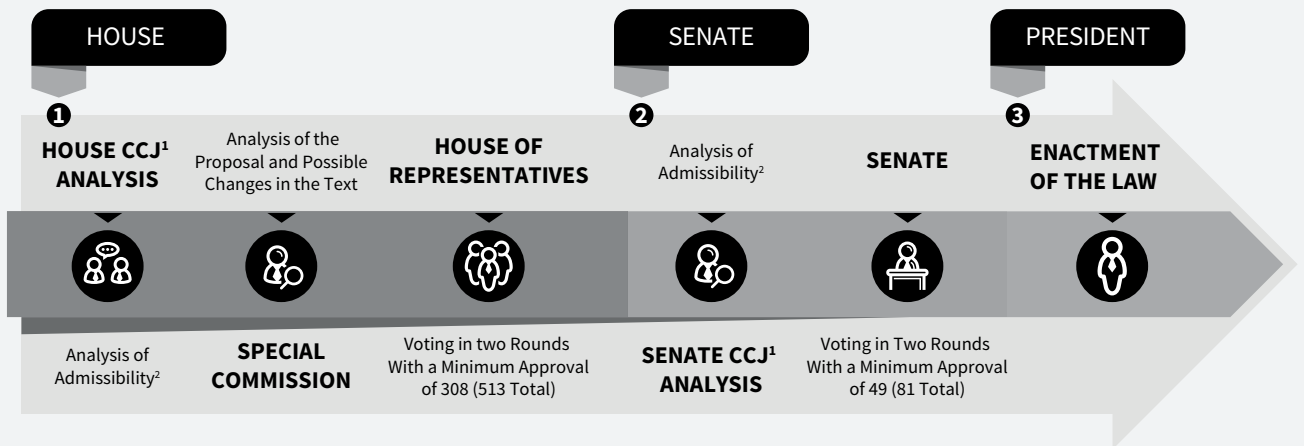
For approval the proposal must have 14 votes out of 27.

### 5) Senate

After going through the Senate CCJ, the bill can be voted by all the 81 senators. To the bill gets approved it must have 54 votes out of 81, in two rounds.

The whole process flow is described below:

#### Proposal Approval Process



Source: Federal Senate

After approving the bill, the expected savings in the Social Security System is about 1 trillion reais in 10 years.

### Expected Savings in the Social Security System

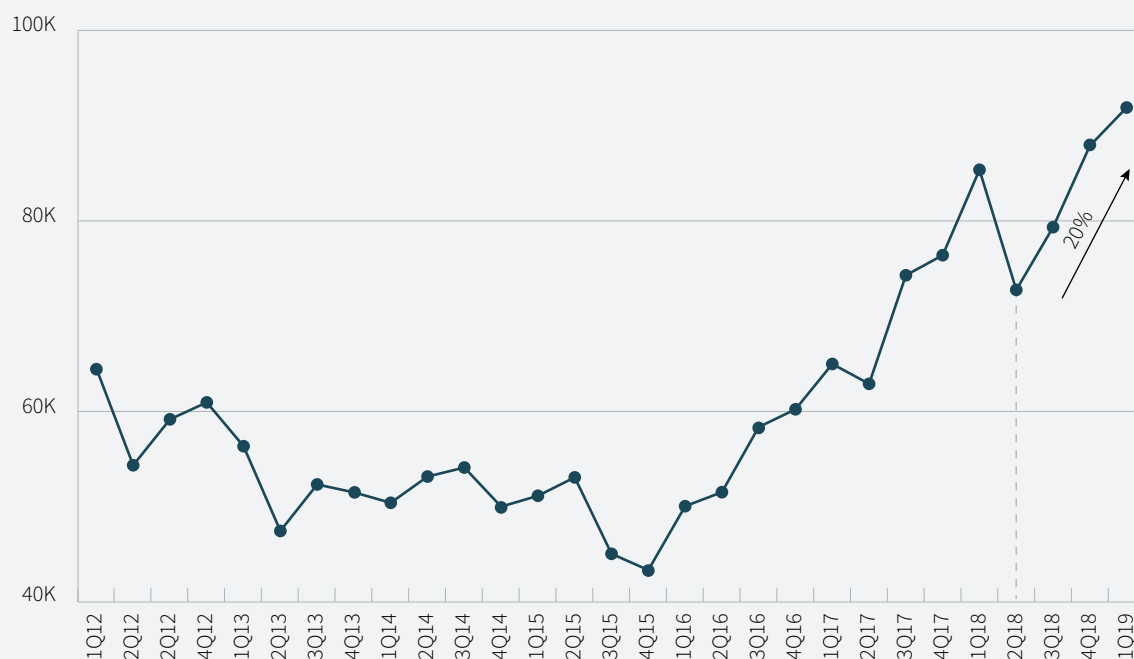
Savings in R\$ Billion	4 Years	10 Years
RGPS Reform	83	715
RPPS Reform	34	174
Change in RGPS tax rates	-10	-28
Change in RPPS tax rates	14	29
BPC Reform	41	182
<b>Subtotal – New Social Security</b>	<b>161</b>	<b>1,072</b>
Military Social Security System Reform	28	92.3
<b>Total</b>	<b>189</b>	<b>1,165</b>

Source: Ministry of Finance

Since there are real probabilities of passing the bill the stock market has already started to react since stocks rose sharply and culminated in a 20% increase in the end of the second quarter of 2018. The prospects of high returns in the Brazilian stock market in the coming years.

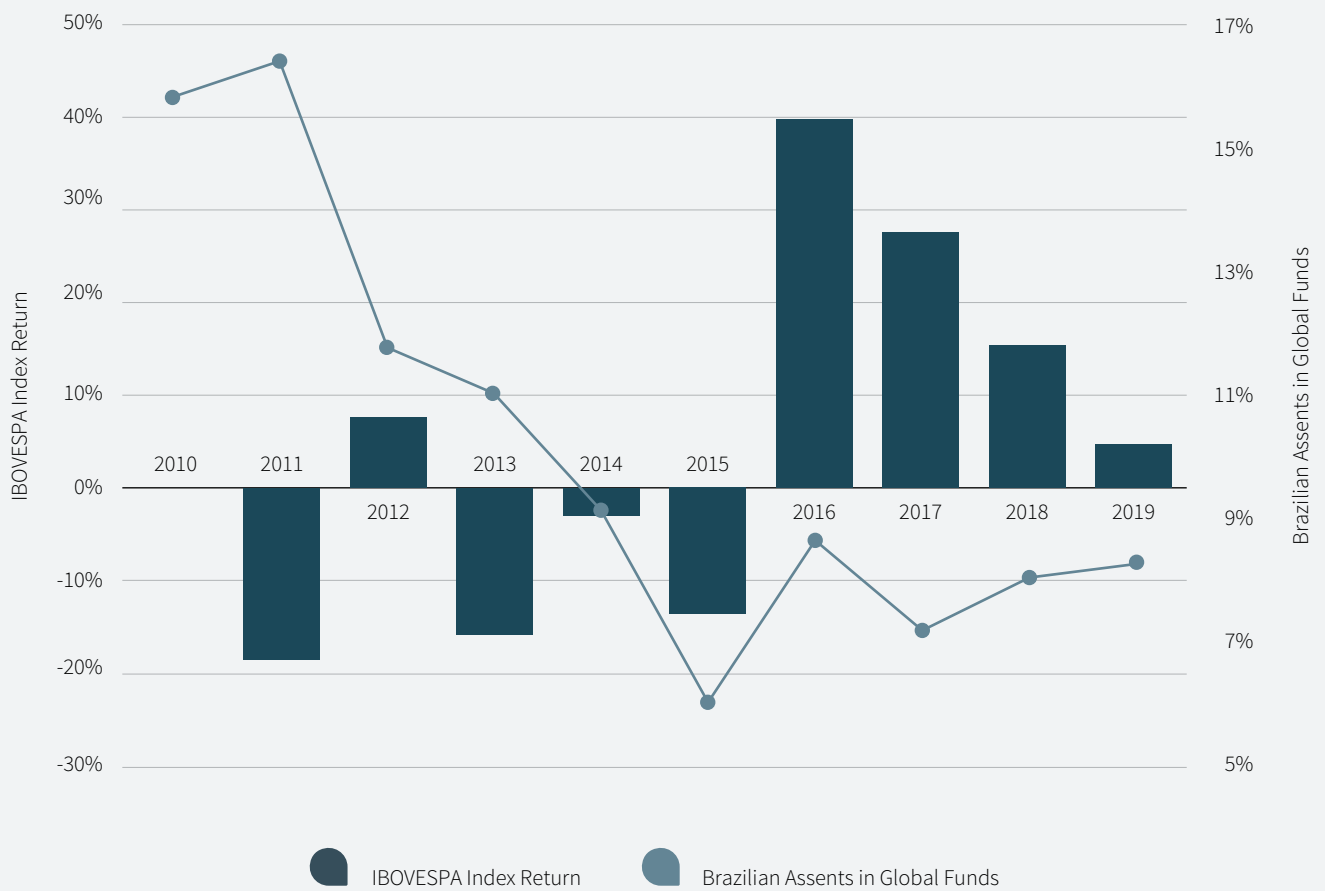
The risk of delay or excessive changes in pension reform may negatively influence the stock index.

### IBOVESPA Index – Closing Price



Source: Bloomberg

## Variation IBOV x Participation of Brazilian Assets in Global Funds

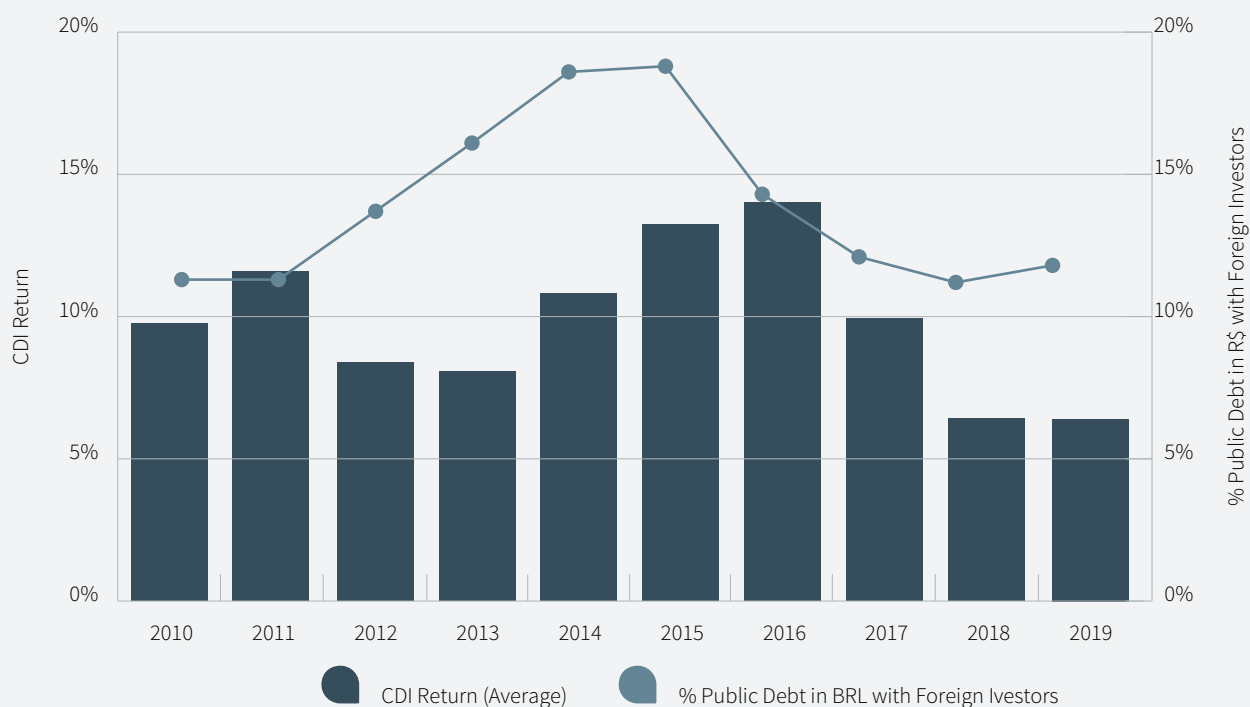


Source: O Globo, B3, EPFR, BTG Pactual, Abvcap, National Treasury

The position in Brazilian assets of global funds operating in emerging markets decreased starting in 2011 with the reduction of the return of the Brazilian stock market and the hike in the yield curve. In 2015, when Brazil lost its Investment Grade Status, this indicator reached its minimum value of 6%.



## CDI Return x Participation Foreigners in Public Debt

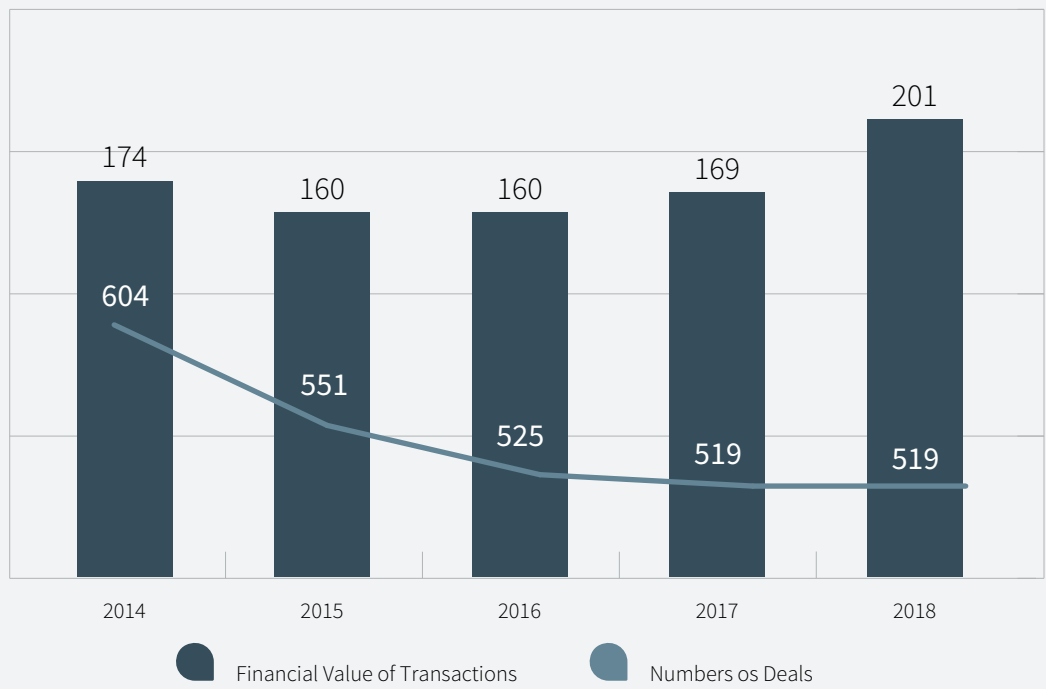


Source: O Globo, B3, EPFR, BTG Pactual, Abvcap, National Treasury

According to a report in the newspaper “O Globo” that heard 15 bank executives and consultants, foreign investors are awaiting the reforms to invest about R\$ 30 billion in the Brazilian Stock Exchange and R\$ 36 billion in Private Equity funds in the next 12 months. As a result, percentage of Brazilian Assets in Global Funds will rise, M&A and IPO markets will accelerate.

The optimism regarding the cost reduction policy should accelerate the market for mergers and acquisitions in 2019, even more with the probabilities of foreign investment of about R\$ 30 billion in the Brazilian Stock Exchange and R\$ 36 billion in Private Equity funds in the next 12 months

**Financial Volume and Number of Transactions in Brazil in R\$ Billion**



Source: Bloomberg

## 2. INFRASTRUCTURE IN BRAZIL

Infrastructure is a fluid concept that involves an enormous amount of assets to deliver services to public entities and to the citizens. The sector includes a great variety of projects like railways, ports, highways, airports, energy, sanitation, telecommunications, mining, as well as social and urban projects, such as urban mobility.

### INFRASTRUCTURE IS ONE OF THE TOP FIVE PRIORITIES IN BRAZIL.

The Brazilian Constitution sets forth the main guidelines for the sector, and indicates which authorities are responsible for each asset.

#### Authorities in charge of the sectors

Sector	Authority
Electricity	Union
Oil & Gas	Union
Gas Distribution	State
Roads	Union, States or Municipalities, depending on the area
Ports	Union
Airports	Union
Railways	Union
Urban Mobility	Municipality
Telecommunications	Union
Sanitation	State or Municipality, depending on the area
Mining	Union

The Brazilian Constitution provides a complex matrix of responsibilities. There are cases in which one authority creates guidelines for the sector and another regulates it more deeply and provides the service or public utility to the citizens. Sometimes public authorities join efforts to provide better services and infrastructure. Public entities also execute agreements with one another, setting forth their responsibilities regarding the assets and services.

There are multiple regulatory agencies in the country, existing at the federal, state, and municipal levels. They provide regulation for each asset and public activity, and ensure contractual obligations are complied with.

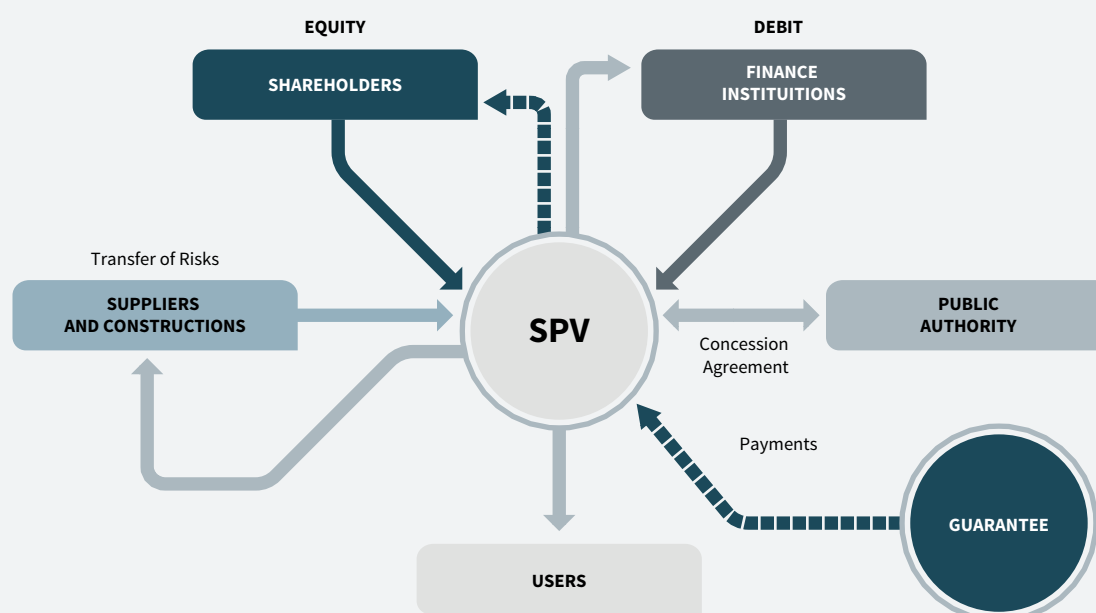
## 2.1. THE GOVERNMENT'S AND THE PRIVATE SECTOR'S ROLES

Since the second half of the 20<sup>th</sup> century, Brazil has joined the global movement for liberalization of the economy. That includes reducing government intervention in the market by proliferating partnerships with the private sector.

The regulatory agencies are a result of this process, ensuring that the Brazilian government acts under regulation, granting public services and infrastructure to private companies. Only a few activities are still provided directly by the government.

Nowadays, PPPs such as concession agreements are not unknown to public authorities, and are helping public entities deliver better services and infrastructure in several areas.

### Parties in a PPP



Source: Guia Prático para Projetos de Eficiência Energética em Edifícios Através de Parcerias Público-Privadas (2017)

In partnerships, the public sector:

- i. grants concessions;
- ii. provides regulation; and
- iii. supervises the performance of statutory and contractual obligations.

The private party:

- i. finances the project (even if the funds come from third parties);
- ii. builds the infrastructure; and
- iii. operates the assets to provide services to public entities or to the citizens.

## **2.2. LACK OF INFRASTRUCTURE**

When compared to developed countries, Brazil lacks infrastructure in all areas. This is an obstacle to its social and economic development.

Its large territory, combined with an ambitious plan to recover and develop the country's economy, sparks the need to expand and improve its infrastructure.

## **2.3. NATIONAL EFFORTS TO IMPROVE BRAZILIAN INFRASTRUCTURE**

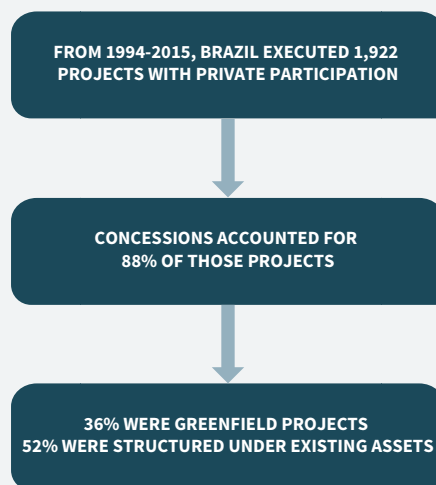
Since the 90s, there has been a shift in the role of public authorities. A privatization process has been in place, with a friendlier environment to develop public-private partnerships. Many public assets have been transferred to the private sector, and the government has granted concessions of public services.

This process continued in the 2000s, particularly with new regulation on PPP agreements and important investment framework related to each infrastructure sector (the Sanitation and Ports Acts, for instance) for both national and foreign players.

The Brazilian federal government rapidly understood its coordination role in filling the gap in national infrastructure, especially considering the public sector is responsible for modeling<sup>1</sup>, procurement and awarding or authorizing infrastructure projects. To address these responsibilities – at least in major projects – the government has launched programs to accelerate the economic growth (PAC 1 and PAC 2), and programs for investments in logistics (PIL 1 and PIL 2).

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1 Brazilian legislation provides that private companies may propose studies, but it is the public authorities that define the definitive directions of each Project.



The federal government has shut down the PIL Program and is concluding the last procurements standing on PACs Program, providing resources for the termination of ongoing projects.

Recently, the Brazilian federal government has created and organized a new initiative to launch a major concession and PPP package: [Programa Avançar Parcerias](#). Its goal is to call the attention of foreign investors to auctions that are expected to happen within the next few years. It is a direct part of the [Investment Partnerships Program](#) (“PPI”)<sup>2</sup>, launched in 2016 to foster the relationship between the government and private enterprise and to stimulate a new cycle of infrastructure investments. PPI does more than just promote partnerships; it actively develops and launches the PPPs, and ensures solid concessions and infrastructure agreements by centralizing the modeling efforts of such initiatives yielding better results.

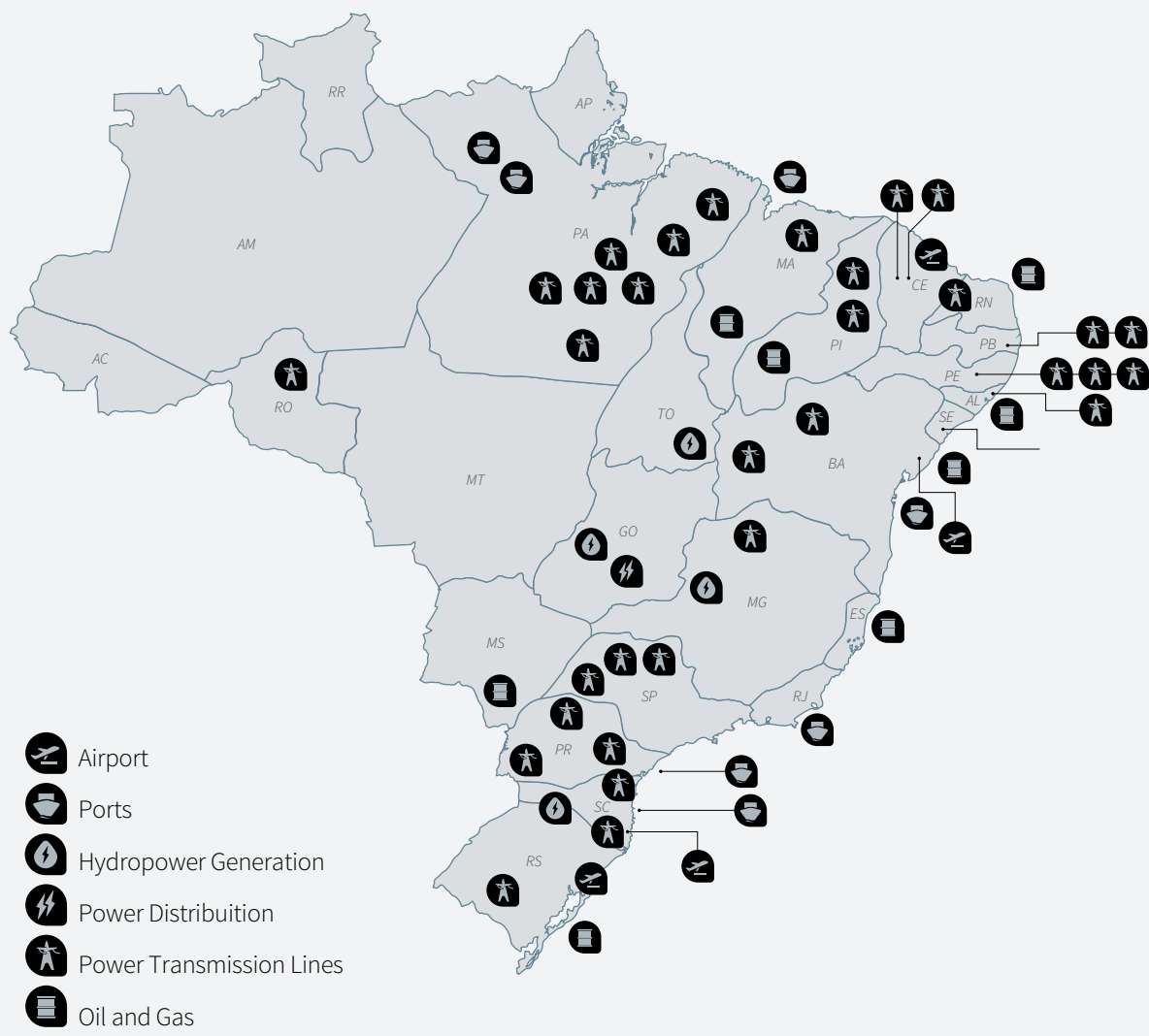
This new program was created not only to ensure better modelling of new projects, but also to fix and adjust ongoing projects. PPI has structured some important guidelines to provide a friendly environment for PPPs, such as more transparency in the studies in each project (for example, public notices must be published in Portuguese and in English), and coordination with other public authorities to create fast-track procedures for permits and licenses needed to build an infrastructure asset. Moreover, concessions under economic difficulties due to credit restrictions have also received attention and have been renegotiated, allowing more investments in brown-field projects.

Although there are still some adjustments to be made, PPI can be considered a positive initiative. It has already reached important results.

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2 This new program was created through Provisional Presidential Decree No. 727, subsequently converted into [Law No. 13,334/2016](#).

Completed Projects

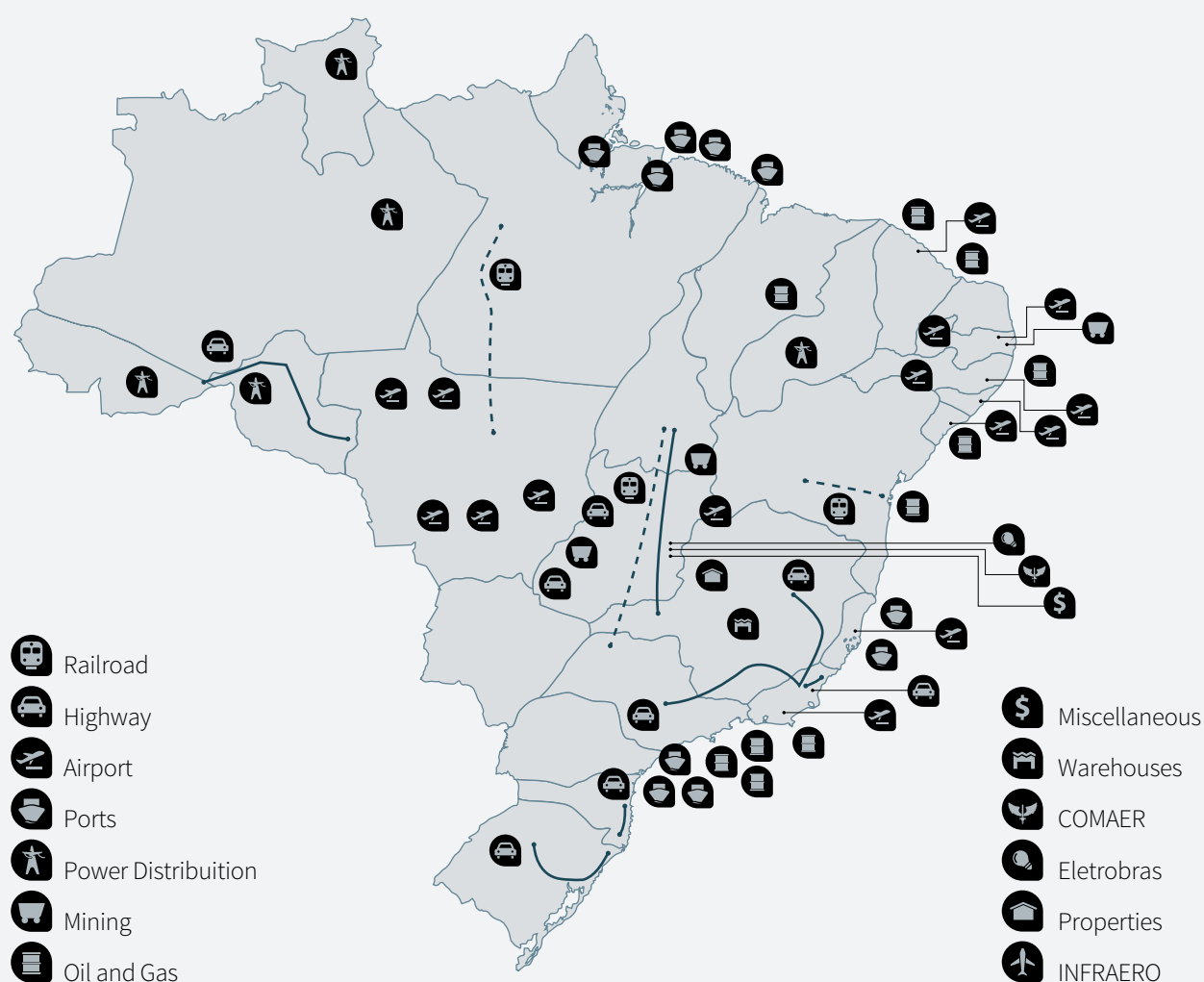


Source: PPI (dec., 2018)

Knowing the program must move forward, the federal government is already taking important measures to improve the success of its results, publishing new regulation to secure on-going projects and to promote greater competition in new bidding processes. Providing clear rules for the use of arbitration within the public sector is an example of such measures.

All this work converges into a new pipeline of investments that are being carefully prepared by the authorities. This effort has already resulted in an ambitious plan for new projects.

## Projects in progress



Source: PPI (dec., 2018)

Much has been done to bring on a new decade to develop Brazilian infrastructure. The current federal program spread its ideas and good practices to other public administrations, which are also keen bringing new projects. Authorities are trying to consolidate a friendly environment for investments in infrastructure.



# 3. PROCURING WORKS AND PUBLIC UTILITIES IN BRAZIL

## 3.1. LEGAL FRAMEWORK

According to the Brazilian Constitution, all contracts between the government and private parties must be preceded by a public bidding process, with some exceptions provided in legislation. Public bidding process is an administrative procedure aimed at obtaining the best offer, while obeying the principles of impersonality and equality.

The procedures for all public procurement and bidding processes in the country are outlined in Federal [Laws Nos. 8,666/1993](#) and [10,520/2002](#). State and municipal authorities may have their own legislation, provided they comply with the federal rules. There are other federal laws that provide different procedures for bidding. For example, [Law No. 8,987/1995](#) establishes the system for concession and permission of public services, and for the selection of private entity that will provide public services. [Law No. 11,079/2004](#) introduced public-private partnerships to the Brazilian legal system and the procurement procedure to select private partners in these cases.

The public procurement process in Brazil, in every modality, is a very formal and rigid procedure, largely based on a literal interpretation of the laws and all procurements can be reviewed by Accounting Courts.

Brazilian legislation prohibits the use of foreign currency in public agreements (including concessions and PPP agreements). Only the national currency, the Brazilian Real, (R\$) may be used.

Legislation grants public parties some prerogatives in agreements. For example, it may unilaterally terminate the agreement and modify its scope; raise or lower the contract value, limited to 25% (except in concession agreements). These rights are statutory and may not be excluded by agreement of the parties.

For private parties, agreements provide mechanisms for them to charge fees such as tariffs. Agreements also grant them power to protect their assets from third parties (such as repossession).

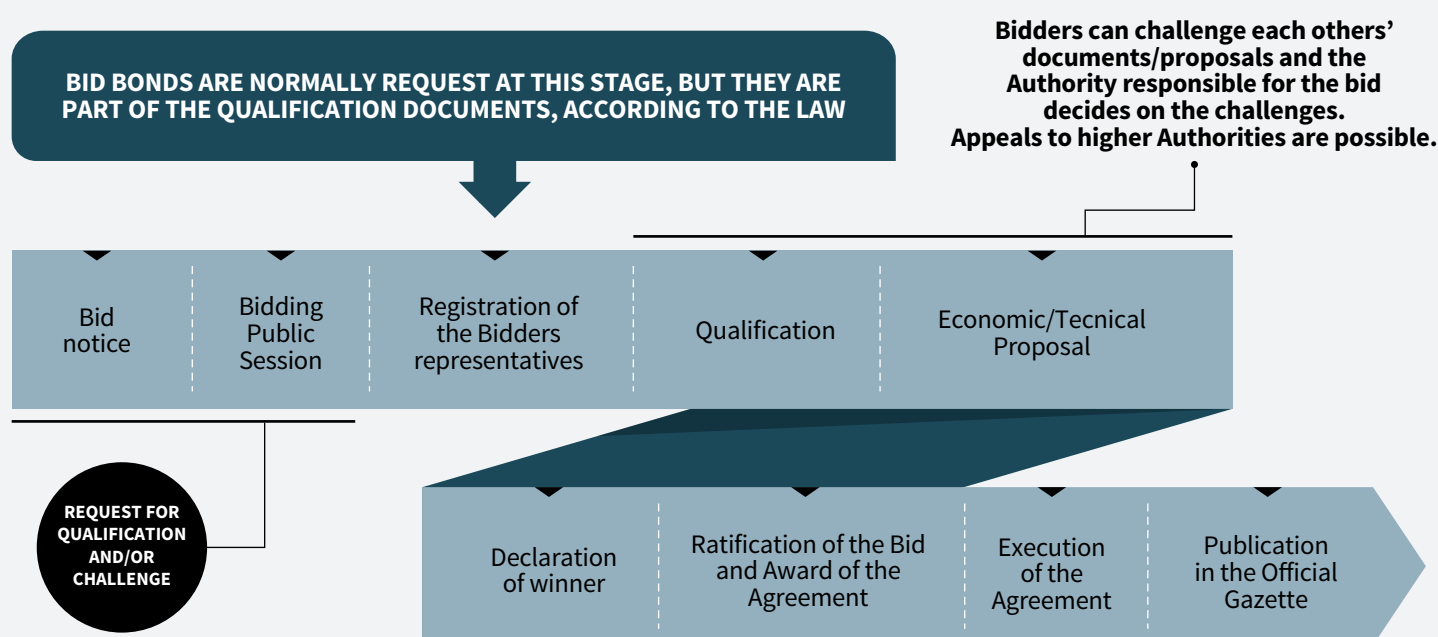
## 3.2. BIDDING PROCESS AND APPLICABLE LAWS AND RULES

All interested parties must be treated equally in bidding processes and the most advantageous offer for the government will be the one to be selected, according to principles of morality, equality, administrative integrity standards, anonymity, legality, adherence to the bid notice and objectiveness of judgement.

### PUBLIC BIDDING PROCESS

For most cases, legislation explains how a bidding process takes place.

#### Regular Process



Before the notice is published, the government engages in formal procedures, such as:

- modeling the basic project;
- defining the preliminary budget; organizing a Public Hearing and Audience (for projects worth more than R\$ 150 million);
- preparing the Public Notice; and
- drafting the agreement.

## THERE ARE PUBLIC HEARINGS FOR ALL CONTRACTS WORTH MORE THAN R\$ 150 MILLION.

The second phase, known as external phase, starts when the Bid Notice is shared with the society by being published on the Official Journals (federal, state or municipal). It sets the procurement object, the expectations, deadlines and requirements, among other applicable conditions, which must be followed by the interested parties for them to be able to take part in the bidding process.

After taking notice the bidding process set off by the Administration in the Bid Notice, interested parties have a deadline to ask for clarifications and present proposals.

Then, respecting the stipulated date, companies have to deliver the required documents, as announced in the Bid Notice, in order to prove their ability to accomplish the object of the bidding process, which involves legal capacity, technical ability, economic and financial qualification and tax and labor clearances, all known as **Qualification Documents**, detailed below:

- **Legal capacity:** intends to guarantee that the bidders are able to exercise rights and contract obligations.
- **Economic and financial qualification:** intends to guarantee that only bidders that are solvent and do not owe to and/or do not have debts with any Public Authority may participate in a bidding process. Usually, the documents required are the company's financial statements, balance sheets and reports, and certificates attesting the company's financial health.
- **Labor and tax qualification:** intends to guarantee that only bidders that do not owe to and/or do not have debts with any public labor or tax organ may participate in a bidding process. Required documents are usually certificates proving tax clearance among Federal, State and Municipal instances (in the Brazilian case), proof of enrollment with the National Register of Corporate Taxpayer (known in Brazil as CNPJ) and certificate of clearance issued by the Brazilian Labor Court.
- **Technical qualification:** technical qualification is requested to prove that the bidder has previous experience and/or technical expertise to fulfill the procurement. A professional qualification may be requested to prove professional registration, whereas other experience qualification may also be requested to confirm if there is an adequate personnel team and/or expertise in the bidder pipeline.

In case of foreign companies, legislation requires, as much as possible, equivalent documents issued in their countries to meet the demands detailed above. If the company's country does not issue any of the referred documents, some public notices allow that companies certify that all requirements requested are fulfilled.

The authorities' decision regarding the qualification documents is then published in the Official Journal indicating each bidder that was considered qualified. Then, bidders can chal-

lunge the decision regarding the qualification stage. Authorities will analyze possible challenges and, after deciding upon such requests, they lead the process to the next stage - to analyze the economic/technical proposals presented by the bidders.

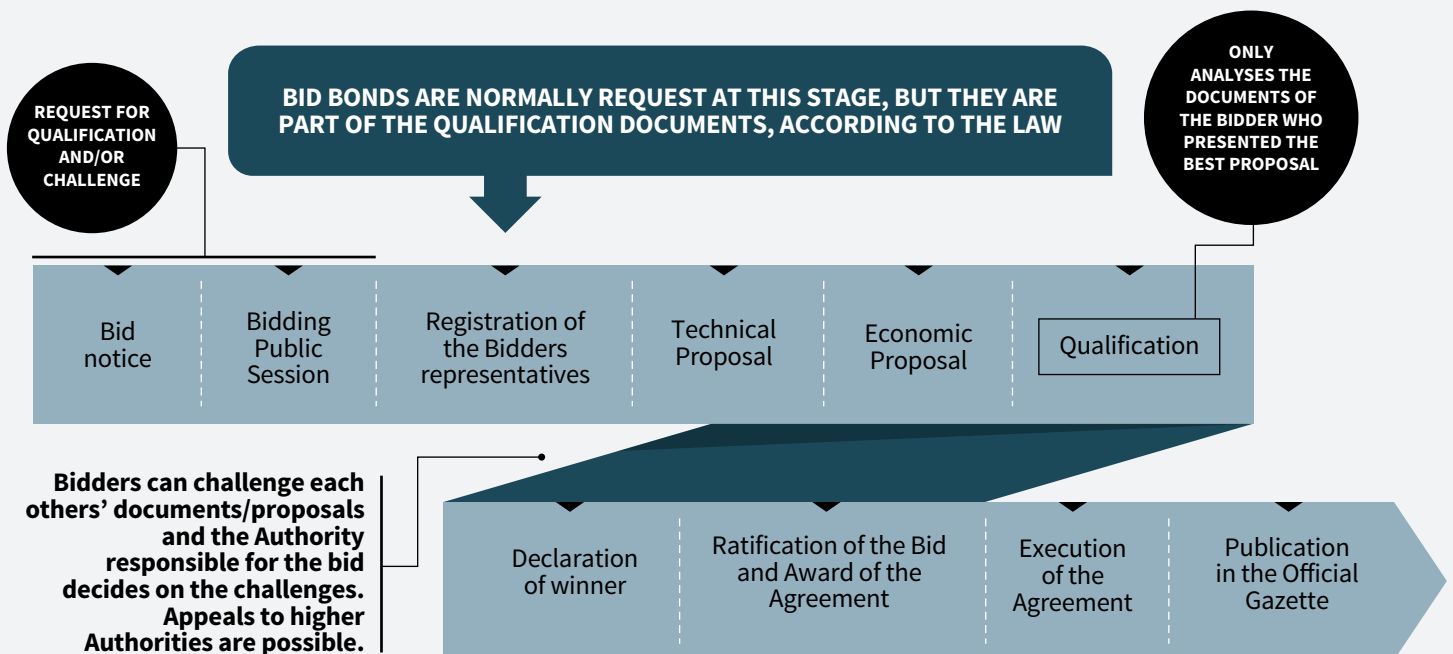
The qualified proposals are analyzed comparatively and ordered from best to worst offer (depending on the award criteria defined in the Bid Notice). A new opportunity to challenge the documents is then made available to bidders, regarding the proposals' content. As with the previous phase of challenges, authorities analyze each request and make their decision public. If the challenges are found groundless, the bidding process goes into its final phase.

However, if any challenge is accepted by the authorities, then the challenged proposal's respective bidder is disqualified and the bidder with the next best proposal is summoned to enter into the agreement.

Next, the bid is ratified and the agreement is awarded by the authorities.

Please note that a reverse auction process may be also placed by the authorities, in which the analysis of the proposals occurs before the qualification documents are reviewed, so there is only one phase to challenge the bidding process. These biddings tend to move faster than the ones that adopt the so-called "Regular Procedure".

### Reverse Action



## TYPES OF BIDDING PROCEDURES

- i. Competition;
- ii. Bid quotation,
- iii. Invitation;
- iv. Competitive selection;
- v. Auction; and
- vi. Competitive Bid

The main differences between them are the amount involved in the agreement, the object of the bid and the period between the publication of the bid notice and the pre-bid meeting.

Type of Bidding Process	Object of the Bidding Process	Time between bid notice and bidding public session
<b>Competition</b>	Type of bidding among any interested parties that meet the minimum qualification requirements set forth in the invitation to bid to perform the object of the bidding. Often used for large and complex procurements, concession agreements.	<ul style="list-style-type: none"> <li>i. 45 days whenever the contract to be entered into provides for integral contract work or whenever the contract is awarded based on “better technique” or “technique and price”; and</li> <li>ii. 30 days for all other cases.</li> </ul>
<b>Bid quotation</b>	Type of bidding among interested parties that have been registered in a previous public register or meet all the conditions to register by the third day before the date when the bids are received, with due regard to the necessary qualification.	<ul style="list-style-type: none"> <li>i. 30 days for bidding processes judged by “better technique” or “technique and price”; and</li> <li>ii. 15 days for other cases.</li> </ul>
<b>Invitation</b>	Type of bidding among interested parties of the sector related to the purpose of the bidding, either registered or not, with at least three (03) chosen and invited, by the administrative unit, that shall display, at an appropriate location, a copy of the invitation to bid that shall extend to other persons registered in the corresponding sector and that show their interest up to twenty-four hours (24) before proposals are delivered.	5 days
<b>Competitive selection</b>	Type of bidding process among any interested parties for choosing a technical, scientific or artistic work, by establishing awards or remuneration to those awarded, pursuant to criteria set forth in the invitation published in the official press.	45 days
<b>Auction</b>	Type of bidding among any interested parties for the purposes of selling assets that are of no use to the government, or products that authorities have seized or apprehended, or to dispose of real estate property, to the highest bid, in an amount equal or higher than the appraisal amount	15 days
<b>Competitive Bid</b>	Type of bidding process with a simple procedure to procure ordinary goods and services, whose main characteristics could be provided in the bid notice according to usual market specifications. This type of bidding procedure may also be executed online.	> 8 business days

When a bidding procedure is opened to foreign bidders, the appropriate modality is competition. For concessions or PPPs, the competition procedure is mandatory. If, on the other hand, the procedure's goal is to procure ordinary services or goods, the competitive bid is the one that should be used.

Normally, the estimated procurement amount is the legal objective criteria used to determine when other types of bidding process will be used.

Types of bidding procedures according to the amount of the procurement

<p><b>For engineering works and services:</b></p> <ul style="list-style-type: none"> <li>• Invitation: up to R\$ 330,000.00</li> <li>• Bid quotation: up to R\$ 3,300,000.00</li> <li>• Competitive bidding: &gt; R\$ 3,300,000.00</li> </ul>
<p><b>For purchases and services not referred to in the previous item:</b></p> <ul style="list-style-type: none"> <li>• Invitation: up to R\$ 176,000.00</li> <li>• Bid quotation: up to R\$ 1,430,000.00</li> <li>• Competitive Bidding &gt; R\$ 1,430,000.00</li> </ul>

## CRITERIA FOR THE AWARDING

According to the purpose of each procurement process, the government chooses the proposal based on the:

- **Lowest Price offered:** selection criteria in which the most advantageous proposal to the Administration is the one that offers the lowest price.
- **Best Technique offered:** Based on technical factors, it is usually used for services that require intellectual/technical ability, such as projects, calculations, engineering, preliminary technical studies and executive projects.
- **Price and Technique:** the proposal that is most advantageous to the government is the one that scored the highest weighted average in both technical and price criteria<sup>3</sup>.
- **Highest Bid offered:** selection criteria used in cases of disposal of goods or concessions of real right of use. For instance, it is used in concessions procedures to identify the bidder that is able to pay the highest value to the government for the grant of the concession agreement.

Authorities may provide advantages and/or requirements for local companies, officers and content for equipment. Small companies registered under Brazilian legislation are also given certain advantages. Some procurements also must establish a margin of preference between foreign bidders and national ones<sup>4</sup>.

3 According to current case law from judicial and auditing courts, the weight may not exceed 70% for technical criteria and 30% for price. Any other arrangement must be justified by the bidding authority.

4 Please see Decree No. 8,224/2014.

# 4. MAIN LEGISLATION REGULATING PUBLIC PROCUREMENT

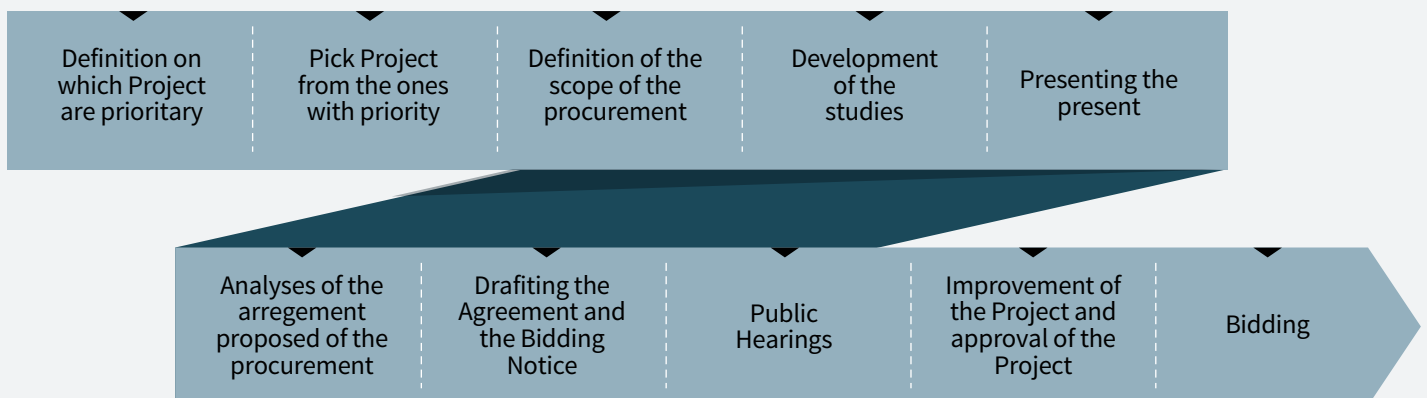
Law	Object	Application
<b>Law No. 8,666/1993</b>	Provides general rules for public tender and administrative agreements regarding public works and services.	Federal and subnational authorities
<b>Law No. 8,987/1995</b>	Regulates the provision of public services through concession agreements and permissions.	Federal and subnational authorities
<b>Law No. 10,520/2002</b>	Regulates a type of procurement that is not established in Law No. 8,666/1993, used to procure ordinary foods and services and always awarded by the lowest price.	Federal and subnational authorities
<b>Law No. 11,079/2011</b>	Regulates public-private partnership agreements	Federal and subnational authorities
<b>Law No. 12,462/2011</b>	Creates the Differentiated Public Procurement Regime (RDC) whose goal is to provide faster procurement processes.	Federal and subnational authorities
<b>Law No. 13,303/2016</b>	Provides rules for state-owned companies regarding their organization, public biddings and procurements.	Federal and subnational state-owned companies whose gross operational income is up to R\$ 90,000,000.00

## 4.1. MODELLING INFRASTRUCTURE FOR PUBLIC AND PRIVATE PROJECTS

Modelling an infrastructure project requires a lot of hard work to achieve a project that meets the authorities' needs and creates conditions to attract the largest number of investors as possible.

Good practices when modelling infrastructure projects include the ability to balance government needs with what private partners may offer. It is essential to prepare a detailed Bid Notice that avoids ambiguities and questions from bidders. Realistic estimate prices and demands of the project also must be a goal, because the project must be feasible to attract bidders and the best services possible may be provided.

### Steps to be followed to launch a bidding process



Modeling a project requires several studies to ensure the best arrangement to meet the parties' needs. For less complex and smaller procurements, it is necessary to present studies justifying the scope of the project, the criteria that will be used to award the offers and proposals, and the estimated price. For more complex, larger procurements, such as PPPs and concession agreements, it is necessary to present in-depth studies, with technical-operational, financial, economic and legal models, for example.



Authorities may model projects in different ways:

1. Independently, using their own technical body.
2. Engaging external consultants to develop studies and project documents, such as the agreement and the bidding notice. Local authorities may also team up with international organizations, promoting a partnership - with the World Bank, for example - to deliver studies and other documents to launch the project.
3. Opening a procedure to gather contributions from the private sector, request studies and even draft agreements and bid notices.



There are specific rules regarding private sector contributions. For example, authorities may only request contributions for complex and large projects, notably, PPPs and concession agreements. Ordinary procurements, and those exclusive to construction works may not use contributions from the private sector in the same way. If contributions are needed, authorities must hire consultants by means of a previous bidding process.

With respect to PPPs and concession agreements, Brazilian legislation<sup>5</sup> provides two paths for authorities to gather contributions from the private sector:

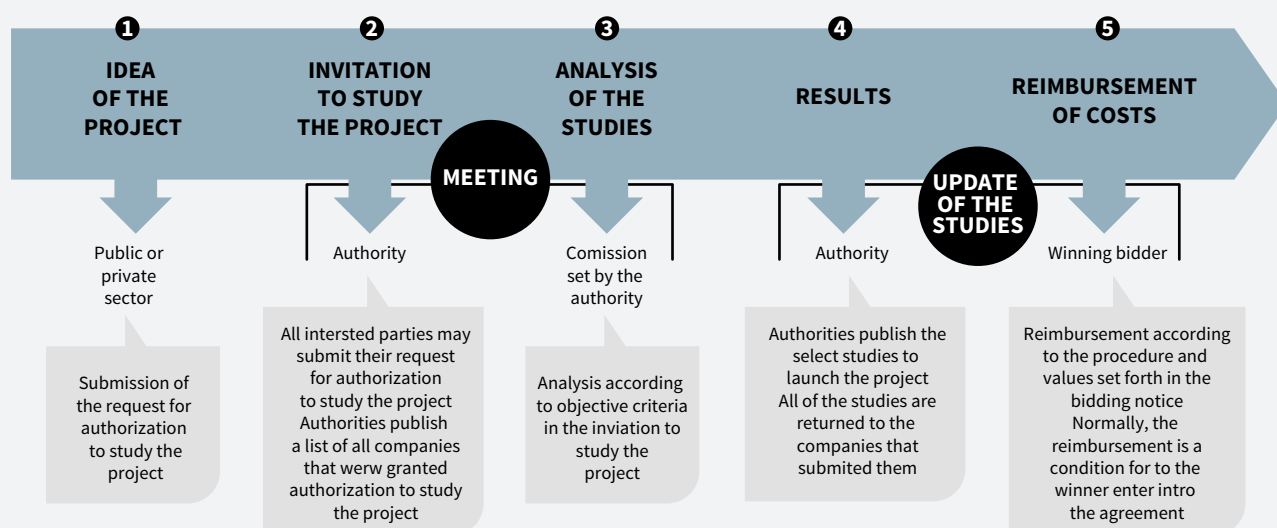
- **Expression of Interest**, for procedures in which the authorities request private companies to contribute to a certain modeling; and
- **Unsolicited Proposals**, in which private companies present proposals to model a certain project without being previously requested to do so. After authorities accept the proposal of the company, an invitation to present studies is published, and any interested party may also present their studies to model the project.

Either way, interested companies must comply with the requirements in an invitation to present studies. It is common that interested companies are required to present an authorization

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<sup>5</sup> For details, please see Federal Decree No. 8,428/2015.

in which they attest to their qualification and experience, and demonstrate their working schedule to present their studies. In both cases, private companies will be reimbursed of the costs of the studies if theirs are selected by the authorities. In case of a successful bidding process, the winner of the procurement is the one responsible for paying such studies.



\*The chart above was structured according to the rules provided by the federal legislation. Local rules may change this procedure.

## REQUIREMENTS FOR FOREIGN COMPANIES

There are many requirements that foreign companies must fulfill to have a chance to be awarded.

1. If the company wants to participate by itself, as a foreign bidder, it must appoint a legal representative in Brazil, with powers to receive summons, legal notices and to file defense in administrative or judicial cases; or

**Tip:** A power of attorney should take care of this requirement. It is recommended that the document be written both in the language of the company's country and in Portuguese. It saves costs and time with translations.

2. If the international company wants to participate in partnership with other companies (local and/or foreign), then:
  - i. The companies must execute a consortium agreement (mostly, a promise to have a consortium organized);
  - ii. Normally, it is mandatory that a Brazilian company be the leader and representative of the consortium.

**Tip:** It is recommended that the partnership between the companies is negotiated prior to the submission of the proposals.

### 3. Teaming up with a local player to save time

It is a good practice for foreign companies to team up with one or more Brazilian companies that have the experience required in the bidding procedure. It makes it easier to gather the documents to be presented in the qualification stage and may save precious time. The same comments about the consortium apply to this partnership.

## AUTHENTICATION BY COUNTRY'S RESPECTIVE CONSULATE IN BRAZIL

**Tip:** Brazil ratified the Hague Convention Abolishing the Requirement of Legalization for Foreign Public Documents ([the Hague Apostille Convention](#)). Since January 2016, diplomatic or consular legalization was replaced by an Apostille, in which there is a note providing information such as country and date of issue, as well as a stamp of the competent authority. It follows the model attached to the Convention and suffices when presenting a document that is required to be legalized.

**Attention:** Even with the Apostille, it is necessary to have all documents translated to Portuguese by a certified sworn translator prior to submitting them to the authorities.

## ALL PARTICIPANTS, REGARDLESS OF THEIR COUNTRY OF ORIGIN, MUST BE SUBJECT TO IDENTICAL CONDITIONS IN INTERNATIONAL BIDDING PROCESSES.

Some of the details explained herein may not apply if the bidding process is promoted in partnership with an international organization.

## 4.2. BRAZILIAN PRACTICES IN BIDDING PROCEDURES

Public procurements are very formal and strict procedures, full of particularities, largely based on a literal interpretation of the laws. All procurements can be reviewed by Accounting Courts and Judicial Courts, which adds to the formality of the procedures, with the purpose of avoiding risks for authorities and competitors.

Legislation allows bidders to submit questions and to challenge authorities' decision, which constantly delays awards in procurement processes. It is also common that bidders have disputes with one another, which can be taken to court.

# 5. DELIVERING INFRASTRUCTURE AND PUBLIC SERVICES

## 5.1. MAIN LEGAL STRUCTURES TO DEVELOP INFRASTRUCTURE PROJECTS

The interaction between the public and private sectors may occur through different types of partnership, some more intensely regulated than others.

Type of Partnerships	Law
Construction Engineering and Services Agreements	Federal Law No. 8,666/1993
Ordinary Concessions	Federal Law No. 8,987/1995
Public-Private Partnership (PPP)	Federal Law No. 11,079/2004
Built-to-Suit	Federal Laws No. 8,245/1991 and 12,462/2011
Efficiency Agreements	Federal Laws No. 12,462/2011 and 8,666/1993
Corporate Partnerships	Federal Law No. 13,303/2016

## 5.2. CONSTRUCTION ENGINEERING AGREEMENTS AND SERVICE AGREEMENTS

Federal Law No. 8,666/1993 establishes the main guidelines for bidding procedures and public procurement regarding engineering construction works and services (including publicity, purchase, disposals and leasing) for the Union, States, Federal District, and Municipalities.

### Main Topics in Continuous Service

- In case of continuous services, the statutory duration of agreements between any authority and a private party is 5 years at the most.
- There are barriers to have goods and services imported, and advantages for local companies to be awarded contracts.
- If the authorities do not comply with their obligations, the private party will face a very complex and slow process to seek enforcement of any payment to be made by the government. In the great majority of those cases, there is chronological order for all court decisions ordering payment of debt, which the courts send to the responsible authority of the debtor. Also, public authorities must respect a lien priority order, which does not include infrastructure agreements.

## ENGINEERING CONSTRUCTION AGREEMENTS<sup>6</sup>

Federal Law No. 8,666/1993 sets forth rules concerning construction engineering agreements. It provides that construction work may be carried out by different systems.

System	Scope	Payment	Risks
<b>Total price</b>	The private partner is responsible for the execution of the project or a specific task, which is not a ready-to-operate asset	Fixed price for the entire work or task	Private party bears own risk
<b>Unitary price</b>	The private partner is responsible for the execution of the work, which does not apply to ready-to-operate assets	Payment for cost of each unit	Public Authorities bear the risk because payments are proportional to the costs
<b>Integral work</b>	The private partner delivers a ready-to-operate enterprise	Fixed price for the work, according to milestones	All costs and risks are transferred to the contractor that must deliver the work in perfect conditions to start operations immediately

<sup>6</sup> Federal Law No. 8,666/1993

The agreements ordinarily executed by the authorities in Brazil are in many ways similar to those adopted abroad. Except for a few particularities, agreements such as the EPC (*Engineer-Procurement-Constructive*) Turn-Key agreement are widely used. The so-called [FIDIC](#) agreements and guidelines follow the same path, by setting mechanisms as examples for further procurements.

A reflex of the national regulation regarding engineering construction agreements is that in Brazil the Company that designed the project is usually prevented from participating in the bidding process for its construction.

National regulation has already created an alternative; it provides an “integrated agreement” system, as set forth in the RDC Act. It allows the private party to prepare the basic and executive designs, to execute the engineering work and services, and to assemble, perform tests, pre-operation works and all other steps necessary to deliver the object. This system is different from the Integral Work one, because it includes the basic engineering design of the project.

## **SERVICE AGREEMENT**

Law No. 8,666/1993 mostly regulates services agreements. This kind of agreement focuses on continuous activities, such as demolition, repair, installation, assembling, conservation, repair, adaptation, maintenance, transportation, lease of assets, publicity, insurance or technical-professional works.

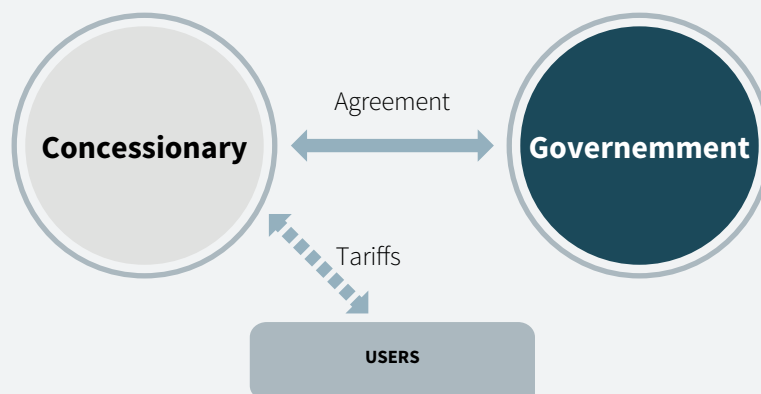
It is important to differentiate service agreements from public services agreements. The latter are agreements by which public authorities grant a public service to a private partner; basically, that is done through a concession or a PPP agreement. Service agreements, on the other hand, are used to provide a service to the government, and not a direct service to users of any public service/utility.

## 5.3. ORDINARY CONCESSIONS AGREEMENTS

The government uses Ordinary Concession Agreements to grant private companies concession to provide public services. Private companies charge tariffs from users for the services. As is the case in most administrative agreements, the concessionaire must be chosen via a competition-type of process.

Federal Laws Nos. 8,987/1995 and 9,074/1995 provide the main rules for this type of agreement. States and Municipalities can complement these rules, as long as they do not violate or contradict federal regulation.

### Ordinary Concession Agreements



#### Key aspects of a Ordinary Concession Agreement are:

- It may only be executed with legal entities or a consortium.
- It may include services provided under monopoly or in a competition regime.
- Authorities grant long-term concessions in the agreements (no limit is provided within the regulation for ordinary concession agreements, although the agreement must have a defined term).
- Authorities grant powers to the private party to propose all legal measures to protect its rights under the concession agreement (such as repossession).

- Payment is made by tariff by service users, regulated by the government (normally by cost-plus pricing or price cap).
- Private companies bear all risks of the public service, regarding the ordinary risks of the business. Extraordinary risks may be shared with the government, according to each arrangement.
- The assets connected to the public service may not be freely disposed of by the concessionaire and must be returned to the public authorities after the end of the concession.
- Private companies, when authorized by the public authority, may expropriate properties, according to the provisions in the agreement and the guidelines of the public authority.
- Private companies may not suspend the services because of the principle of continuity of public services.
- The agreements have very different provisions regarding termination, including, for example, direct assumption of the concession by the authorities (upon payment of damages) as justified by public interest, forfeiture of the agreement in case of breach (damages are paid only after the termination of the agreement).
- The concessionaire is directly liable for the services and the public authorities are secondarily liable.

## **AUTHORITIES ARE ALSO OBLIGED TO RESPECT THE ECONOMIC AND FINANCIAL BALANCE OF ORDINARY CONCESSION AGREEMENTS**

### **5.4. PUBLIC-PRIVATE PARTNERSHIPS**

PPPs represent long-term partnerships between the public and private sectors, providing mechanisms, such as risk-sharing and public guarantees. PPPs in Brazil are a new branch of concessions, in which private companies may provide public services, operate public assets and/or provide services directly to the government. Concessionaires may be paid entirely by government or their remuneration may be composed by a partial payment from the government plus tariffs paid by service users.

PPPs are regulated by Federal Law No. 11,079/2004, which provides guidelines for the agreements and their bidding process. States and municipalities may also provide their own rules if it does not contradict or violate federal directives.

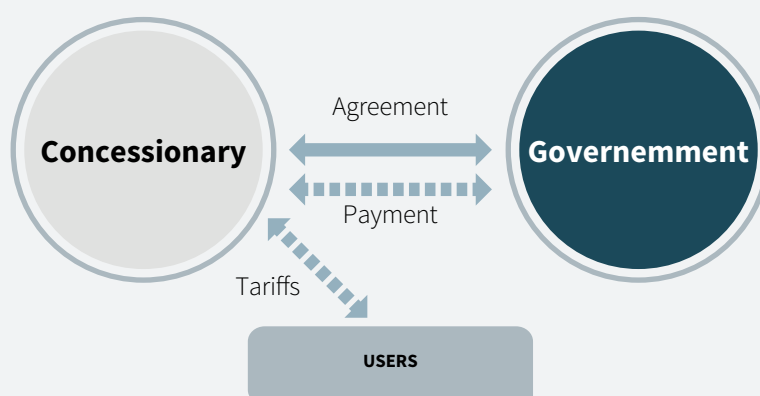
There are two types of PPPs in Brazil: **Sponsored Concession and Administrative Concession**. They both follow the same logic provided in federal guidelines. A PPP may only be subject to a government procurement if its scope includes more than the ordinary construction or



supply of a public asset. PPPs have to work to provide better services regardless of whether they are directed at public users or the government.

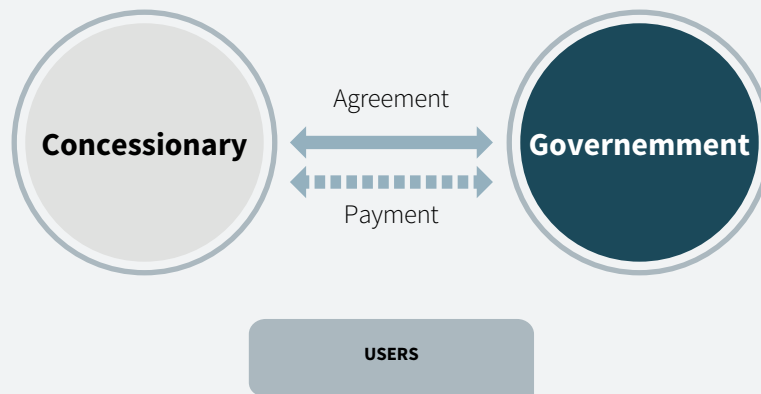
The **Sponsored Concession** is used to grant public services and/or assets in which the private partner charges tariffs from users and gets paid directly by the government. Payment from authorities is a tool used to maintain balance, so concessionaires do not overcharge the users, and so that projects that would not otherwise work without high tariffs become feasible.

### Sponsored Concession Agreements



In **Administrative Concessions**, public authorities execute service agreements in which they are the party that will directly or indirectly benefit, even if it includes the construction or supply of public assets and goods. This type of concession creates an agreement in which the only remuneration may be exclusively made by direct payment from the government, without any tariff charged to users. It means that some services for which no tariff may be charged (for example, prisons, public schools and public hospitals) can also be granted by authorities to private parties through a PPP agreement.

## Administrative Concession Agreements



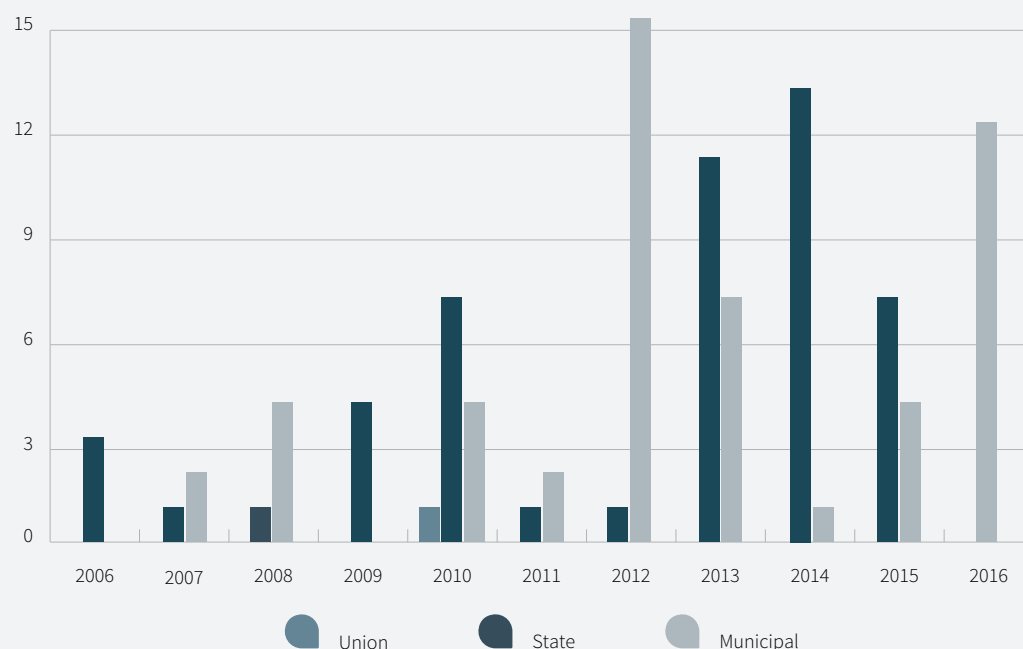
### The main aspects of PPP agreements, irrespective of their type are:

- Risks are allocated between both parties, depending on the nature of the project.
- The minimum duration of the agreement is five (5) years and the maximum is thirty-five (35) years.
- There are public guarantees to avoid execution procedures against the government.
- The minimum investment amount is R\$ 10 million
- PPP agreements can authorize step-in-rights for investors that can be enforced according to “tripartite agreements” executed by the government, the concessionaire and the financiers.
- To prevent public fiscal balance from executing more PPP agreements than they are capable of paying, there is a statutory indebtedness limit with which each government agency must comply.

## TYPES OF PROCUREMENT AT A GLANCE

	Ordinary Public Procurement	Ordinary Concession	Sponsor Concession (PPP)	Administrative Concession (PPP)
Object	Engineering, construction, services, purchase, disposition, leases	Public service or the use of a public asset	Public service or the use of a public asset	Direct or indirect services to the government, which may include the construction and supply of public assets and/or public goods
Amount	According to each type of bidding process	-	At least R\$ 10,000,000.00	
Term	5 years	According to the agreement	5 - 35 years	
Compensation	Direct payment by public administration	Through tariff	Tariff + Payment by the Government	Payment by the Government
Financing/ Guarantee	Financed by the government. No guarantee offered by the government	Financed by the private partner. No guarantee offered by the government	Financed by the private partner Government provides a guarantee	
Risks	Borne by the government (in case of RDC, risks may be shared if parties agree)	Ordinary risks are borne by the private party (extraordinary risks may be shared by the parties)	Risks are shared by the parties	
Project	Government's liability (if RDC, the private company may develop the engineering project)	May be transferred to the private partner		

Brazil's experience with PPPs is quickly growing. All infrastructure sectors may benefit from the PPP model. There are already more than 99 ongoing PPP agreements.



Source: [Radar PPP, As Parcerias Público-Privadas no ano de 2016.](#)

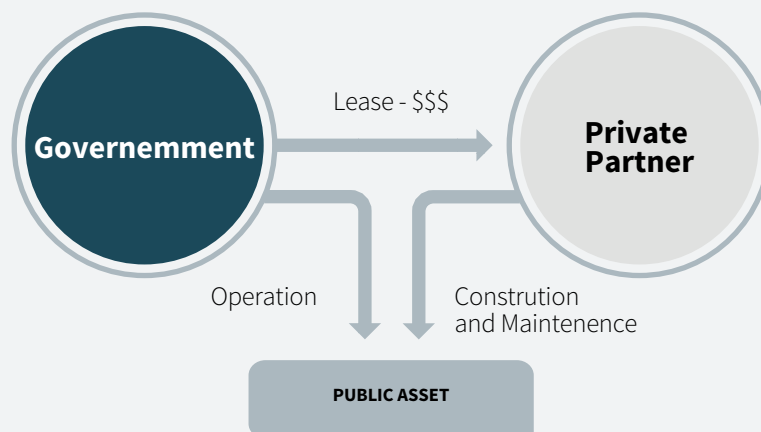
## 5.5. BUILT-TO-SUIT AGREEMENTS

These agreements are similar to lease agreements, in which a private partner builds and maintains a public asset while the government leases and operates it. The government pays a monthly rent to the private partner and by the end of the agreement, the asset is entrusted to the government.

The legal grounds for this type of agreement are set forth in the Brazilian Private Leasing Law (Federal Law No. 8,245/1991), in other legislation (such as the Brazilian Civil Code), in the Brazilian Public Procurement regulation and in administrative case law, importing most of its rules from foreign regimes.

Many Brazilian Accounting Courts have already given the green light for this kind of agreement (Federal Accounting Court, and the Accounting Court of the States of São Paulo, Paraná and Espírito Santo). The water and sewage sector are pioneers in using this structure, which has been broadly used<sup>7</sup>. This type of agreement is normally used by state-owned companies that provide public services and need investment in a specific asset.

<sup>7</sup> Please see the partnerships regarding (i) SABESP and SPE Água Limpa Paulista S/A; (ii) SABESP and SPE Sapucaí Mirim S.A.; and (iii) SANASA and SPE Foz de Capivari S.A.

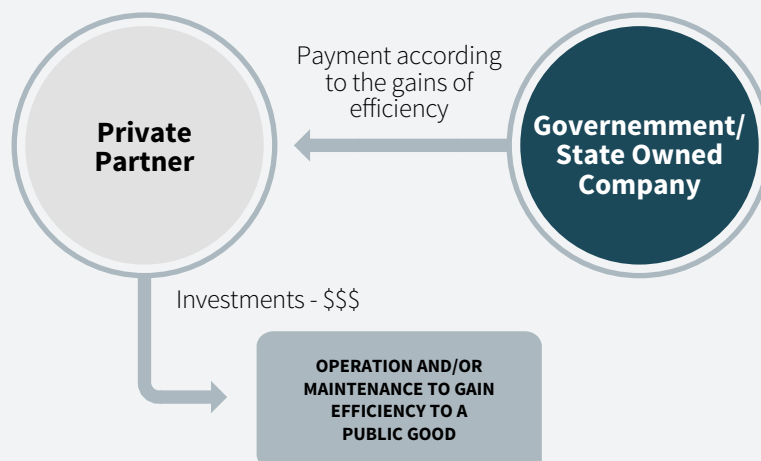


## 5.6. EFFICIENCY AGREEMENTS<sup>8</sup>

Efficiency agreements are those in which the government only pays private partners according to the efficiency gained in the operation/maintenance of a public asset.

These agreements are provided in Law No. 8,666/1993 and RDC legislation. The risks regarding payment are allocated to the private partner, who has the obligation to gain efficiency in order to receive payment.

The use of efficiency agreements is growing in the water distribution sector; state-owned companies are using them to repair and maintain their grids, avoiding waste of drinkable water.



São Paulo's Accounting Court has already analyzed and approved this type of agreement.

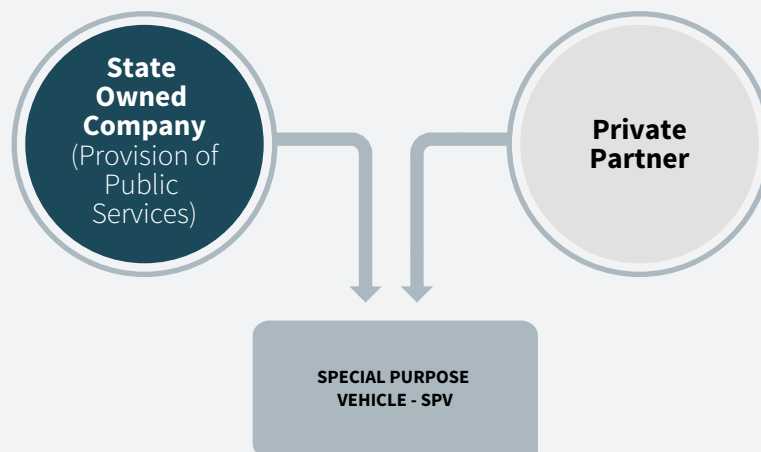
<sup>8</sup> Federal Laws Nos. 12,462/2011 and 8,666/1993.

## CORPORATE PARTNERSHIPS

Corporate partnerships between State-owned companies and private parties are quite common in Brazil. Both parties create a corporate joint venture, normally in a Special Purpose Vehicle – SPV. The SPV, in turn, develops the project, installs public assets and/or provides public services.

These partnerships require an alignment of interests and, therefore, are not subject to a previous bidding process.

The Brazilian Act for State-Owned Companies (Federal Law No. 13,303/2016) regulates such partnerships, which can also include association agreements (*i.e.* those agreements that simulate a corporate relation between the parties in order to develop an economic activity or to provide a public service).



Shareholders' agreements are common in this kind of partnership. The best practices in corporate governance may be adopted.

# 6. MANAGING PUBLIC-PRIVATE AGREEMENTS

## 6.1. EXECUTING AN AGREEMENT WITH THE PUBLIC ADMINISTRATION

Executing an agreement with the government depends on bureaucratic and rigorous procedures, unlike agreements between private parties. It is important to be aware of these aspects before entering a public procurement.

Proposing changes to a public-private agreement requires filing a formal application, to begin an administrative procedure to analyze whether the amendment is possible. Proposed amendments must be approved by authorities

Once a company has entered into an agreement with any public entity in Brazil, it is important to be aware that formal aspects must be fulfilled. The main provisions of the agreements must be publicly disclosed, and the execution of the project is reviewed by accounting and judicial courts, and Brazilian citizens. In some cases, it is even possible to be subject to public hearings about decisions that affect the agreement. Failure to comply with formal aspects may subject the company to penalties provided in the Brazilian legislation.

**ALL INFORMATION AND REQUIREMENTS EXCHANGED BETWEEN PUBLIC AND PRIVATE PARTIES MUST BE DONE FORMALLY, IN WRITTEN DOCUMENTS.**

The agreements within infrastructure sector, specifically the long term concession or PPP, must be seen as much as possible as partnerships. It is good practice to ensure that agreements are seen as partnerships, as well as to keep communication channels open with government authorities.

**AUTHORITIES ARE BOUND TO THE ORIGINAL ECONOMIC AND FINANCIAL BALANCE OF THE AGREEMENT AND OBLIGED TO MAINTAIN SUCH BALANCE FOR THE DURATION OF THE PARTNERSHIP.**

## 6.2. MAIN ISSUES AND CONCERNS IN DEALING WITH THE GOVERNMENT

Several principles and rules guide public activity. All agents must comply with them. Authorities are only able to act upon legal authorization, which makes any private public relationship very complex. To ensure legal certainty to the execution of a public procurement, it is important for a private company to verify the presence of certain conditions before effectively initiating a partnership with any public authority.

- **Is the public technical body ready to execute the agreement?**

The interested party needs to verify, for each concrete situation, all legal limitations applicable to the public technical body to confirm whether it has the legal authorization required to execute that agreement.

- **Did the authorities comply with all preliminary procedures regarding the procurement?**

The legal procedures applicable to the procurement of a public-private agreement may vary according to the type and regime of each agreement. It is important to confirm whether public authorities have gone through all legal steps to subject an agreement to a procurement process, such as obtaining internal authorizations, promoting public hearings (if applicable), and obtaining all external approvals, as needed.

- **Is the agreement part of a regulated sector?**

Different regulation may apply to different infrastructure sectors. It is important to determine what the applicable legal framework, so there are no surprises.

- **Are there standard practices regarding similar agreements?**

The existence of similar practices repeated in similar public-private agreements provides legal security, because it indicates that the terms and conditions of the bid notice and the agreement comply with legal standards and are accepted under the current case law. It is therefore advisable to check whether there are similar agreements between authorities and private partners.

- **Is there case law analyzing similar agreements?**

Searching for jurisprudence is another example of good practice. They may guide the decisions in the bidding process and even the authorities' actions in the execution of the agreement.



## 6.3. RISK ALLOCATION

Risk allocation in each agreement, along with financing and interest aroused, are determining factors of project feasibility.

Public-private relations are subject to risks throughout the duration of the contract, as is also the case in private relations.

Risks are normally assessed in the modeling stage. It is important to assess (i) the risks to which the agreement is subject, (ii) how these risks will affect the agreement, (iii) which party will be responsible for the risk, and (iv) the mechanisms to mitigate potential materialized risks.

Effective methods of risk allocation are those that designate specific risks to the party that is best prepared to avoid or mitigate their negative effects (in case they materialize).

Risk sharing is only applicable to concession agreements, PPPs agreements, and RDC agreements (*i.e.* integrated agreement).

For those agreements with a risk-sharing structure, it is paramount to verify whether:

- the contract is objective when dealing with risk allocation
- the mechanisms to preserve the relationship under the materialization of any risk are adequate

Under PPI Program and within PPP agreements, it is mandatory that all agreements have a risk matrix such as below:

Category	Risk	Allocation	Materialization (downsize)	Effects for the Public Partner	Effects for the Private Partner	Mechanisms for mitigation or to share the risk	Provision within the agreement
Environmental	License & Certificates	Private Partner	Late delivery of assets	Delayed provision of services. Possible need for alternative service.	Payments for services may be delayed, subject to availability of services. Smaller financial return.	Penalties. If the delay is caused by environmental authorities, economic and financial rebalance of the agreement.	Section XX

## 6.4. AMENDMENTS TO PUBLIC-PRIVATE AGREEMENTS

Limitations and strict legislation apply to amending public-private agreements, to avoid fraud in bidding processes.

The golden rule is that morality and fair competition are to be upheld. It is paramount to avoid that any change to a public procurement is seen as a breach of the obligation of promoting a new bidding process.

### **ALL AMENDMENTS TO PUBLIC AGREEMENTS MUST BE IN WRITING, MADE BY FORMAL AMENDMENT INSTRUMENTS.**

The amendment instruments, as is the case with the agreements themselves, are bound to statutory obligations related to public law principles and directives, such as publicity and accountability.

The Brazilian Constitution provides that the **economic and financial balance** between the parties must occur throughout the entire duration of the contracts.

In ordinary construction engineering agreements and in services agreements the effects to economic and financial balance are usually less important. The procedure to reestablish it in these situations is usually simpler and more objective. If third parties or external factors cause the imbalance, balance must be restored. If caused by a unilateral increase or decrease of the contract value, both parties must comply with their obligations without rebalancing the agreement if it is above or below statutory. Balance must be reestablished in the agreement.

### **BECAUSE PUBLIC AND PRIVATE PARTNERS SHARE RISKS IN CONCESSION AND PPP AGREEMENTS, EACH SITUATION CALLS FOR ANALYSIS.**

There are no objective criteria for long-term agreements such as concession and PPP, which raises much debate about their economic and financial balance. The risk-sharing arrangement in these agreements and the greater risks they involve lead to complex discussions. Each situation needs to be assessed individually so a proper solution may be found.

It is not uncommon for these discussions to be taken to court. They involve, for example, the original internal rate of return (IRR) of the agreement's cash flow and the feasibility of the studies on which the procurement was based. Cases of unlawful expropriation or unrealistic compensation review are also commonly taken to court.

The methods used to rebalance the agreements are also subject to controversy. There are different ways to calculate and assess the financial and economic balance of agreements. This may include the analysis of original obligations so that the original economic and financial conditions set within the proposal presented during the bidding process is restored. This may cause discussions about new obligations that need to be analyzed according to different variables, notably those representing a fair compensation for that new obligation.

According to Brazilian Public Procurement legislation, agreements may have balance restored by:

- Direct payment;
- Extension of the original term;
- Review of the obligations originally provided; and
- Review of risk allocation (not applicable to engineering construction agreements and service agreements).

Public authorities may also use other forms, or a combination of the previous ones.

# 7. REGULATORY AGENCIES

Regulatory agencies were introduced in Brazil in the beginning of the 90s, with the privatization of several public services. The agencies are special public entities with financial, operational and technical autonomy. The Union, States and municipalities may create agencies to regulate activities under their authority.

A regulatory agency in Brazil plays a broad role. Commonly, they inspect the provision of public services by the private sector, do quality control, publish specific and technical regulation, promote public hearings, and act as moderators to resolve disputes.

**TO ASSURE LEGAL SECURITY, BRAZILIAN AGENCIES ARE UNDER PRINCIPLES OF GOOD GOVERNANCE AND TRANSPARENCY. NATIONAL REGULATION SEEKS TO COMPLY WITH THE BEST PRACTICES PUBLISHED BY OECD WITHIN REGULATION.**

However, the country faces some difficulties in granting full autonomy to agencies to provide regulation. Initiatives are under way to change this scenario, and allow for secure and stable regulation in Brazil.

The [National Program to Develop Brazilian Regulation \(PRO-REG\)](#) is a very good example, in which all stakeholders contribute to improve the national regulatory system, provide coordination between entities that participate in the regulatory process, mechanisms for accountability and participation of the civil society and improve tools to increase the quality of national regulation.

The **Regulatory Agencies Bill** (Law No. 6,621/2016) is currently being discussed in Congress and may reinforce ideal regulatory best practices in the Brazilian legal framework. For example, it will require mandatory analysis of regulatory impact prior to the publication of regulation. Few agencies provide this analysis at the moment.

# **8. CORPORATE MATTERS**

## **8.1. INCORPORATING A BRAZILIAN LEGAL ENTITY**

The incorporation of a legal entity in Brazil has been streamlined over the last years. It must have a Brazilian address for its head office, an officer residing in Brazil and foreign equity holders must have Brazilian resident attorneys in fact with powers to receive summons of process.

The legal entity's incorporation documents must be registered with the of commerce Registry of the State in which its head office will be located, and in some instances with other governmental bodies. Once registered, the legal entity shall receive a Corporate Taxpayer's Registration Number (CNPJ), which will be its main identification number for business and tax purposes.

Any remittance of funds to and from the legal entity to its foreign equity holders must be registered before the Brazilian Central Bank, according to its rules and procedures.

## **8.2. LIMITED LIABILITY COMPANIES**

With a simplified corporate capital and management structure, a limited liability company is usually the choice for investors who hold a controlling position in the venture. Limited liability companies are required to have at least two equity holders and one officer, who shall have a limited or unlimited term of office. All equity holders of limited liability companies have voting rights, and, in general, the corporate control is fully exercised by equity holders holding more than 75% of the limited liability company's corporate capital. Limited liability companies allow the distribution of dividends to be disproportional to the equity interest of each equity holder.

New preliminary regulation changed the rules for limited liability companies allowing one equity holder per company.

### **8.3. JOINT STOCK COMPANIES (CORPORATIONS)**

Corporations are often chosen by investors for transactions that require a more complex corporate capital and management structure. Corporations must have two or more shareholders, however they may have one single shareholder, as long as the shareholder is a Brazilian company and certain procedures to have a wholly-owned subsidiary are observed.

Corporations may issue common shares and preferred shares (voting or non-voting), and the shareholders may agree on alternative means to distribute dividends to the holders of preferred shares, not necessarily linked to equity participation. This is the corporate type allowed to trade securities in the stock exchange markets (public corporation).

Corporations are managed by a Board of Officers with at least 2 officers and may also have a Board of Directors with at least 3 members. The term of office of any officer or director is limited to a 3-year period, reelections allowed.

These legal entities are subject to specific formalities, such as the need to have their corporate books certified by the Registry of Commerce and to have their shareholders meetings minutes, certain board of directors meetings minutes and yearly financial statements, among other publications published in the official journal and a local newspaper.

### **8.4. CONSORTIUMS FOR PARTICIPATION IN PUBLIC TENDERING**

Consortiums are structures in which different companies combine their capacity to invest and develop a proposed project and are structured through agreements registered before the Registry of Commerce, setting each participant's rights and obligations. A leader is defined, and even though a consortium is not a legal entity, liability may be contractually allocated among the parties.

Attention to the provisions set in each bid notice is essential, since the bidding process' requirements usually do not demand any document setting each participant's rights and obligations be registered before the Registry of Commerce. For the bidding process, all that is required is a pledge to have a consortium organized. If the winning bidder is a consortium, it shall then register before the authorities, or incorporate a SPV in which equity participation shall correspond to the participation within the consortium.

## 8.5. FOREIGN COMPANIES ACTING IN BRAZIL

In order for a foreign company to operate in Brazil through a branch, agency or establishment (as opposed to a company incorporated in Brazil), it must first obtain an authorization from the Ministry of Economy, specifically by the Small and Medium Company Special Secretariat. Among other documents and information, the foreign entity must appoint an attorney-in-fact residing in Brazil with powers to represent and bind the foreign company and to be served with summons. After obtaining such approval to operate, the foreign company's incorporation documents must be registered with the Registry of Commerce of the State where its offices are going to be located. Except by the change of address and legal representative of the establishment in Brazil, that shall be directly submitted to the Registry of Commerce, any other changes to the foreign company's incorporation documents must be previously approved by the Ministry of Economy, as stated above, in order to be valid and effective in Brazil, and once approved such amendments shall be registered with the relevant Registry of Commerce as well.

Foreign companies must have their yearly financial statements of their branches, agencies or establishments in Brazil, and any other publications required by the laws of the country of origin of such foreign company, published in the official journal and a local newspaper.

Before opening a branch, agency or establishment, however, the foreign company must verify whether the activity it intends to explore in Brazil may be performed by foreigners by Law, considering there are restrictions to certain activities being performed by foreign companies, such as: (i) journalism and broadcasting sounds and images; (ii) research, mining or extraction of natural mineral resources; and (iii) security services and transport of cash and valuables, among others.

## 8.6. KEY ASPECTS IN M&A TRANSACTIONS IN BRAZIL

When entering into an M&A transaction the investor must bear in mind which liabilities it will undertake according to the intended transaction. Some key points are good practices that must be observed:

- Whenever the M&A deal involves the acquisition or merger of any company, business or project already operating in Brazil, the investor must carry out a full legal and compliance **due diligence** to verify any potential risks and liabilities that may be inherited by the investor after the conclusion of the transaction.
- During the negotiations, the investor must also **verify which guarantees** will be offered to the investor, especially any necessary formalities to guarantee their en-

forceability and for how long such guarantee may last, considering the time it may take for any potential liability to cause a loss for the investor.

- Another aspect that the investor must consider is how to handle **dispute resolutions**, considering Brazilian courts often take long to reach a final decision and that the secrecy of lawsuit procedures is not entirely assured. Arbitration clauses are more common in M&A agreements and Brazil has become more used to arbitration procedures, mainly considering the latest higher courts' decisions, that have recognized arbitration decisions as fully enforceable in Brazil.

## 8.7. DISSOLUTION, LIQUIDATION, TERMINATION OF BRAZILIAN COMPANIES

Legal entities may be terminated by agreement of their equity holder or due to a lawsuit filed against the company requesting its dissolution. In any case, in order to formally terminate a company, a liquidator must be appointed, who will handle the liquidation of the legal entity's assets, pay its liabilities and, if there are any remaining amounts, distribute them among the equity holders according to their equity interest in the company, or other parameter they agree on.

After the liquidation procedure is concluded, the termination instrument of the legal entity must be registered before the Registry of Commerce and its registration before other public bodies must be updated to state that the company no longer exists. Also, a Brazilian resident must be appointed as book-keeper, and this individual must keep the legal entity's books filed for at least 5 years, in case any public authority requires them.

**IMPORTANT:** It is paramount that the company is terminated according to all the necessary requirements and procedures, otherwise any discrepancy may be used as in a lawsuit as grounds to claim that the legal entity was irregularly terminated, in which case the equity holders can be called to answer for the company's obligation, according to the "disregard of the legal entity" doctrine.



## 8.8. BANKRUPTCY AND RECOVERY

The central provisions governing liquidation and recovery in insolvency proceedings of corporate debtors are in Brazilian Law No. 11,101/2005 (Reorganization and Bankruptcy Law). It makes three types of insolvency proceedings available to companies in a situation of debt: **(i)** court-supervised reorganization; **(ii)** out-of-court reorganization and **(iii)** liquidation (in insolvency).

As a rule, throughout the whole court-supervised or out-of-court reorganization process, debtor's management remains in control of the debtor's business. Debtors will be able to negotiate with creditors on the repayment of debts, including corporate restructuring, under the protection of the law.

The aim of reorganization proceedings is to overcome the economic and financial crisis of the debtor, by combining an automatic stay with a recovery plan under the debtor's self-management. The Law stipulates a 180-day stay period for all claims and enforcement proceedings against the company in court-supervised reorganization after it is granted and, within this period, the company has to present a reorganization plan that must be approved by creditors and further approved by the court in charge of the proceedings.

<b>Court-supervised Reorganization</b>	<p>The claim is filed by the debtor and it does not require creditors' approval or acknowledgement.</p> <p>The negotiation is supervised by a judge. A court-appointed trustee and a creditors' committee, if there is one, oversee the self-management of the debtor.</p> <p>All existing creditors prior to the filling of recovery request are subject to the proceeding, even if they are not due at the date.</p> <p>The company must be operating for at least two (2) years.</p>
<b>Out-of-Court Reorganization</b>	<p>The debtor negotiates its debts out of court with its creditors that might be included in the reorganization plan.</p> <p>The out-of-court reorganization still involves proceedings before an insolvency judge, as the debtor's recovery plan requires judicial approval to become legally binding to dissenting creditors.</p> <p>The court approves the plan if it is executed by affected creditors holding at least three-fifths of the overall value of the claims of all affected creditors.</p>
<b>Liquidation (in insolvency)</b>	<p>The liquidation proceedings provide for a comprehensive realization of the debtors' assets. In contrast to self-management as part of recovery proceedings, in liquidation proceedings, the debtor no longer retains its self-management power, such that the insolvency trustee is in charge of the management of the debtor's insolvent estate/business. The aim is to liquidate the company's assets and pay creditors proportionally.</p>

The Reorganization and Bankruptcy Law does not apply to **(i)** state-owned companies and/or government-controlled companies; **(ii)** financial institutions; **(iii)** consortia; **(iv)** insurance companies; and **(v)** health care companies.



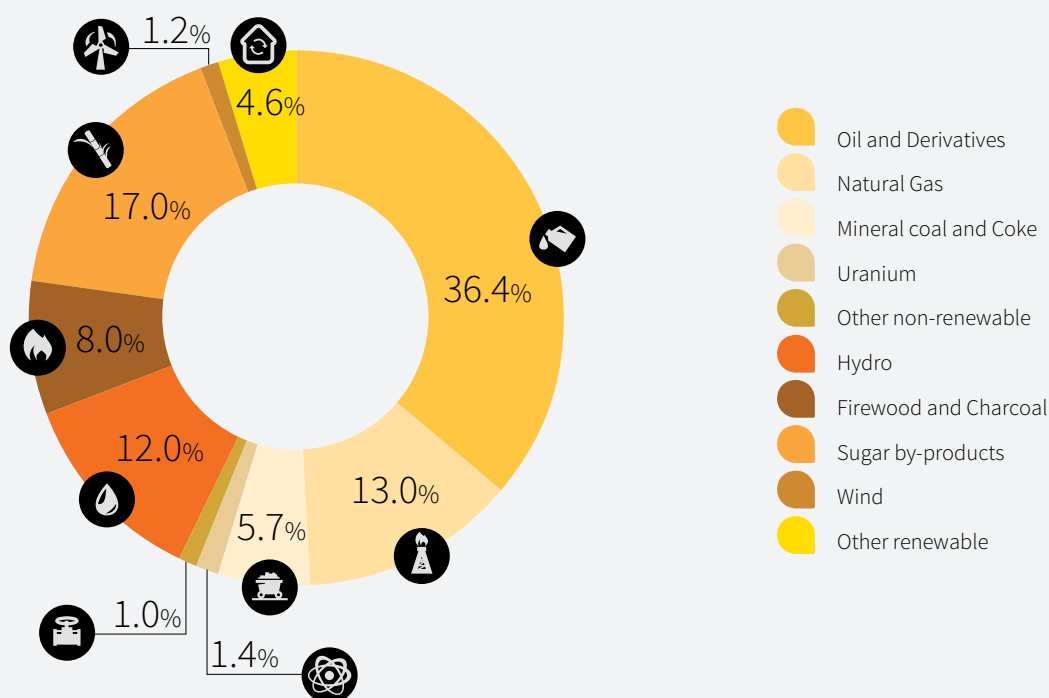
# 9. ENERGY

A growing consumer market with vast resources available, and a stable legal and regulatory framework, so can be described the energy sector in Brazil. Not surprisingly, this industry has attracted billions of Reais in investments in recent years, including M&A, new power generation and transmission capacity, as well as new oil and gas exploration and production fields. For the future, estimates point to investments of almost R\$ 1.8 trillion over the next 10 years, 78% of which in petroleum, natural gas and derivatives and 22% in electric energy<sup>9</sup>.

## 9.1. ENERGY MIX

Brazil has one of the world's cleanest energy mixes. In 2017, renewable sources such as hydro, firewood and sugarcane byproducts accounted for 42.5% of the domestic energy supply. In other countries, less than 15% of the power supply came from renewable sources.

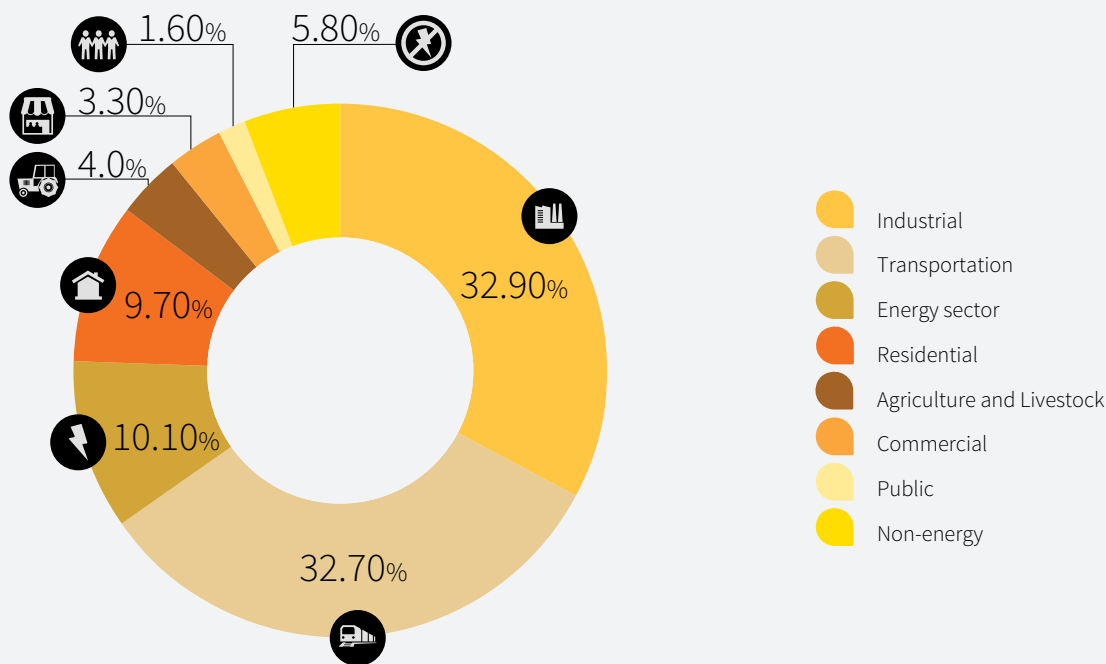
**Internal Energy Supply - by source**



Source: [BEN/EPE \(2018\)](#)

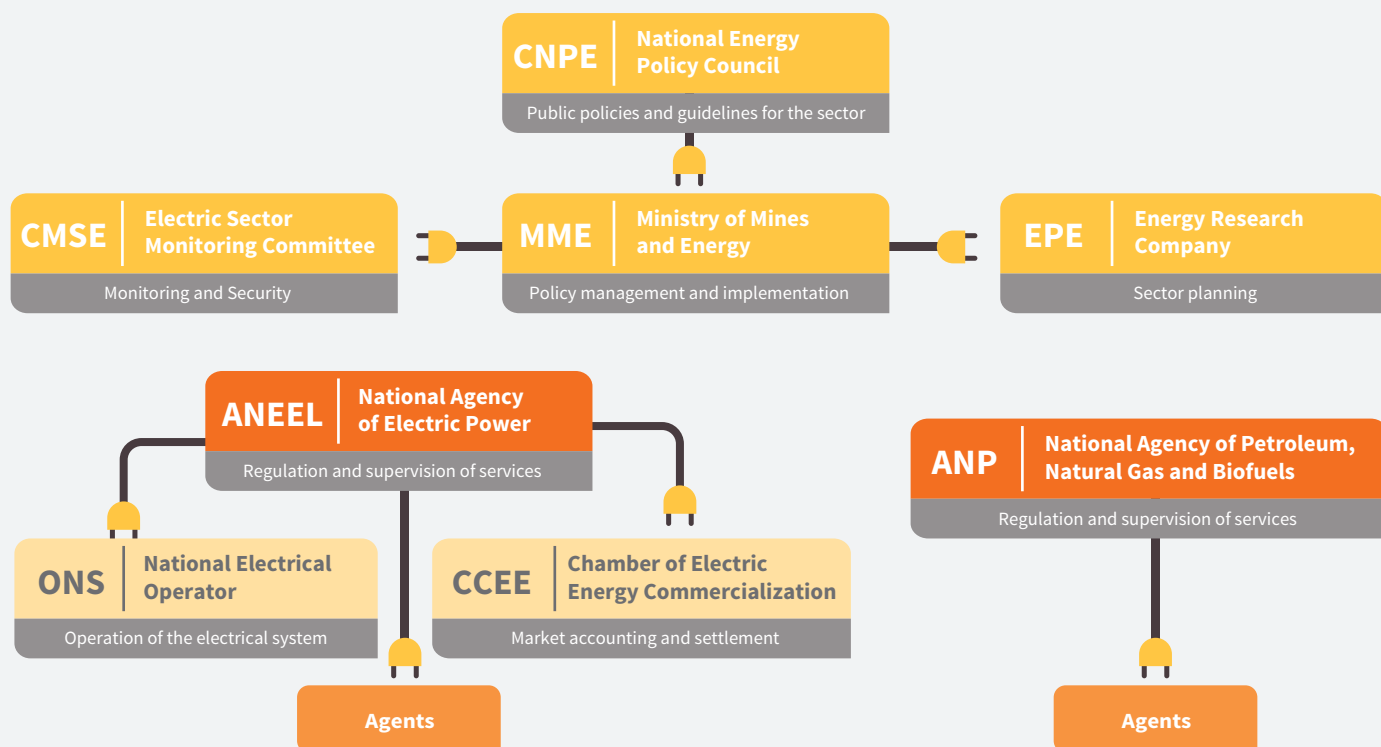
The industrial and transportation sectors were each responsible for 1/3 of the internal energy consumption. In the industrial sector, consumption is distributed among several segments, with an emphasis on Food and Beverage (9%), Iron and Steel (6.2%), Paper and Cellulose (4.9%) and Chemistry (2.7%). In transportation, consumption is highly concentrated in the road modal (30.6%).

**Final Energy Consumption - by sector**



Source: [BEN/EPE \(2018\)](#)

## 9.2. INSTITUTIONAL STRUCTURE



### [National Energy Policy Council - CNPE](#)

CNPE is the advisory body of the President for the formulation of policies and guidelines.

### [Ministry of Mines and Energy - MME](#)

MME works for the formulation and enforcement of policies, according to CNPE's guidelines.

### [Electric Sector Monitoring Committee - CMSE](#)

The CMSE's role includes monitoring and assessing the continuity and security of the electric power supply.

### [Energy Research Company - EPE](#)

EPE addresses studies and research for planning in this sector.

### [Brazilian Electricity Regulatory Agency - ANEEL](#)

ANEEL is responsible for regulating and supervising the activities associated with electric power generation, transmission, distribution and trading, and also for establishing tariffs for segments with no competition (natural monopoly).

### National Agency of Petroleum, Natural Gas and Biofuels – ANP

ANP is the regulator of the oil, natural gas and biofuels industries, and promotes bids and contracts on behalf of the Federal Government with concessionaires for oil and natural gas exploration, development and production.

### National Electrical Grid Operator – ONS

ONS is responsible for coordinating and controlling the operation of the electric power generation and transmission facilities in the National Interconnected Grid System (SIN), and for planning the operation in the isolated areas of the country, under ANEEL's supervision and regulation.

### Chamber of Electric Energy Commercialization– CCEE

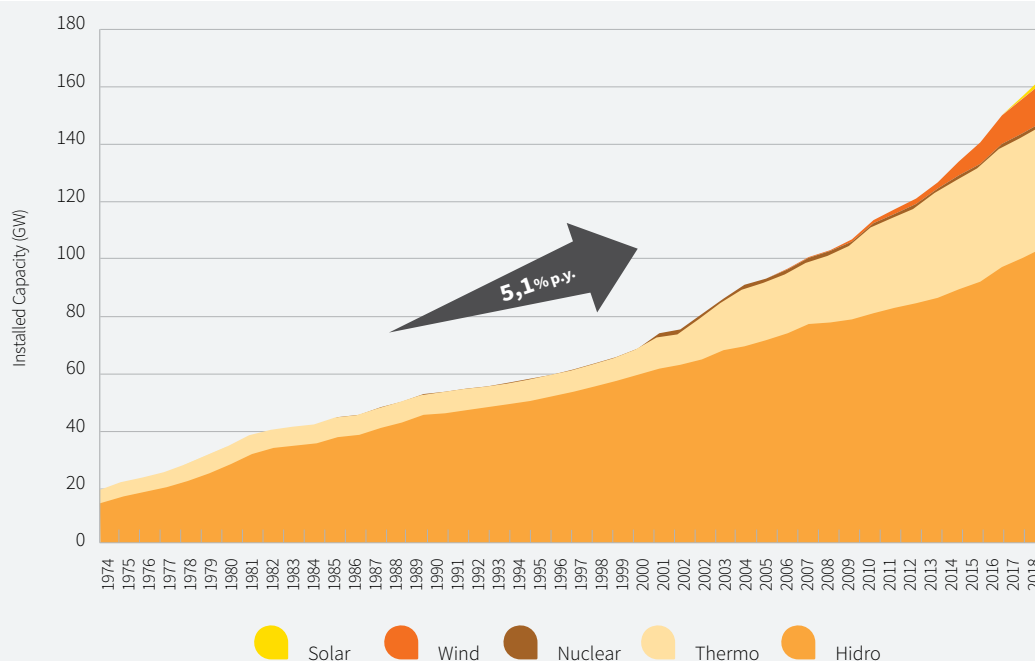
CCEE is responsible for managing electric power contracts, accounting and financial settlement in the short-term market, and for holding auctions for energy purchase and sale in the regulated market under ANEEL's delegation.

## 9.3. ELECTRIC POWER

### 9.3.1. ELECTRICITY MIX

The Brazilian electricity mix is under transformation. After decades of absolute predominance of the hydro source, others gained relevance in the installed capacity of electric power generation such as the addition of new thermoelectric and the entrance of wind and solar sources.

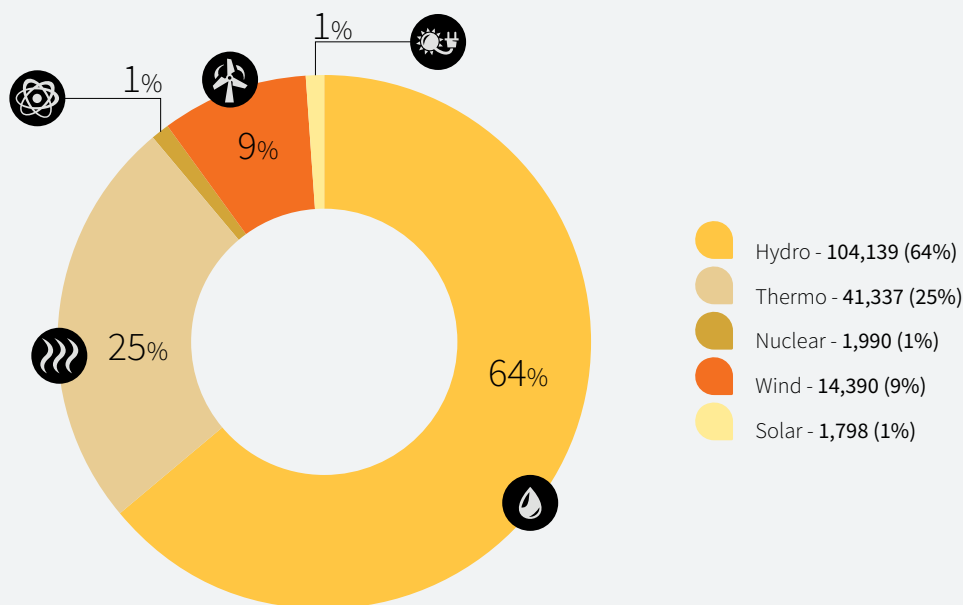
#### Evolution of the Brazilian electricity mix (GW)



Source: [BEN/EPE \(2018\)](#)

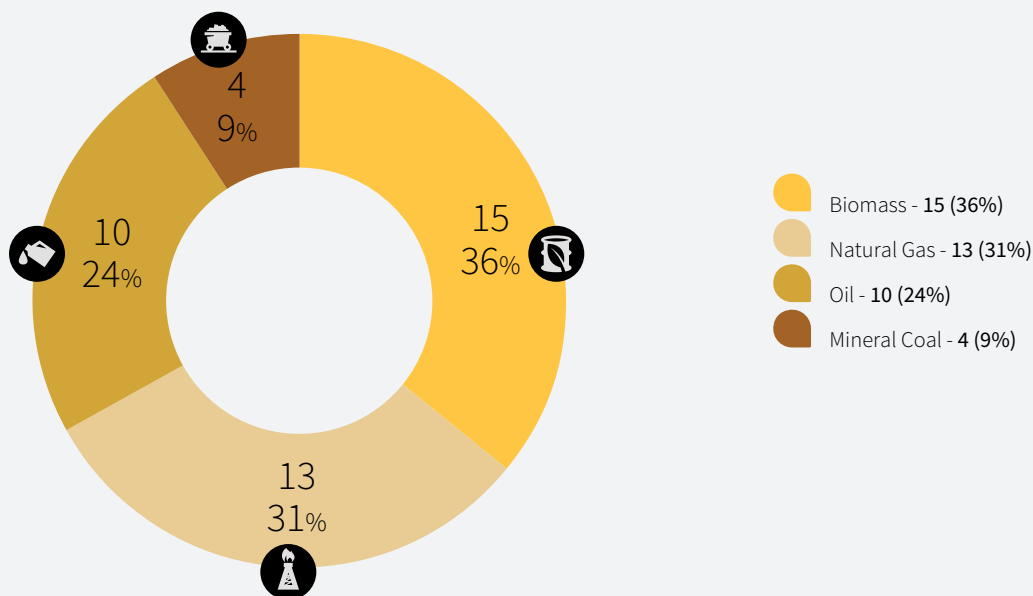
Wind power reached its first installed GW only in 2011, and it already accounts for 9% of total power, with over 14 GW installed - an increase of almost 2 GW per year in the last 7 years. Solar power has already exceeded 2 GW , accounting for 1% of the country's electric mix.

**Electricity Mix - GW (2018)**



Source: [BIG/ANEEL](#)

**Thermoelectric by Source - GW (2018)**



Source: [BIG/ANEEL](#)

Biomass and natural gas plants deserve special attention in the thermoelectric section.

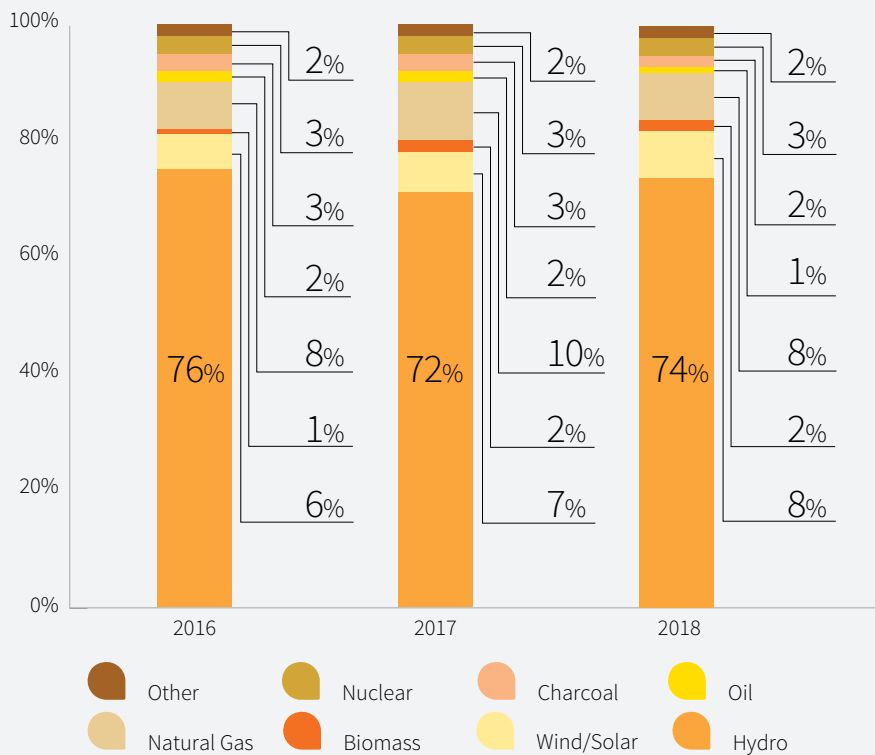
In summary, Brazil has an electric mix of 82.5% renewable, which is increasingly diversified, as a result of its incredible hydro potential, the quality of the winds and the sun, and the large availability of biomass, whether sugarcane or wood chip.

### 9.3.2. GENERATION

Despite the large system of hydroelectric reservoirs interconnected by a robust transmission grid, the country has suffered with low rainfall volumes in recent years. This scenario influences the generation of the plants and, consequently, reflects on energy prices, since the thermoelectric plants, used as backup, present higher operation costs.

This means that hydroelectric plants, which accounted for over 90% of the generated energy in the early 2000s, currently account for about 75% of the total. At the same time, wind and solar powers are gaining more room in generation.

**Electric power generation - by source (%)**



Source: [ONS](#)

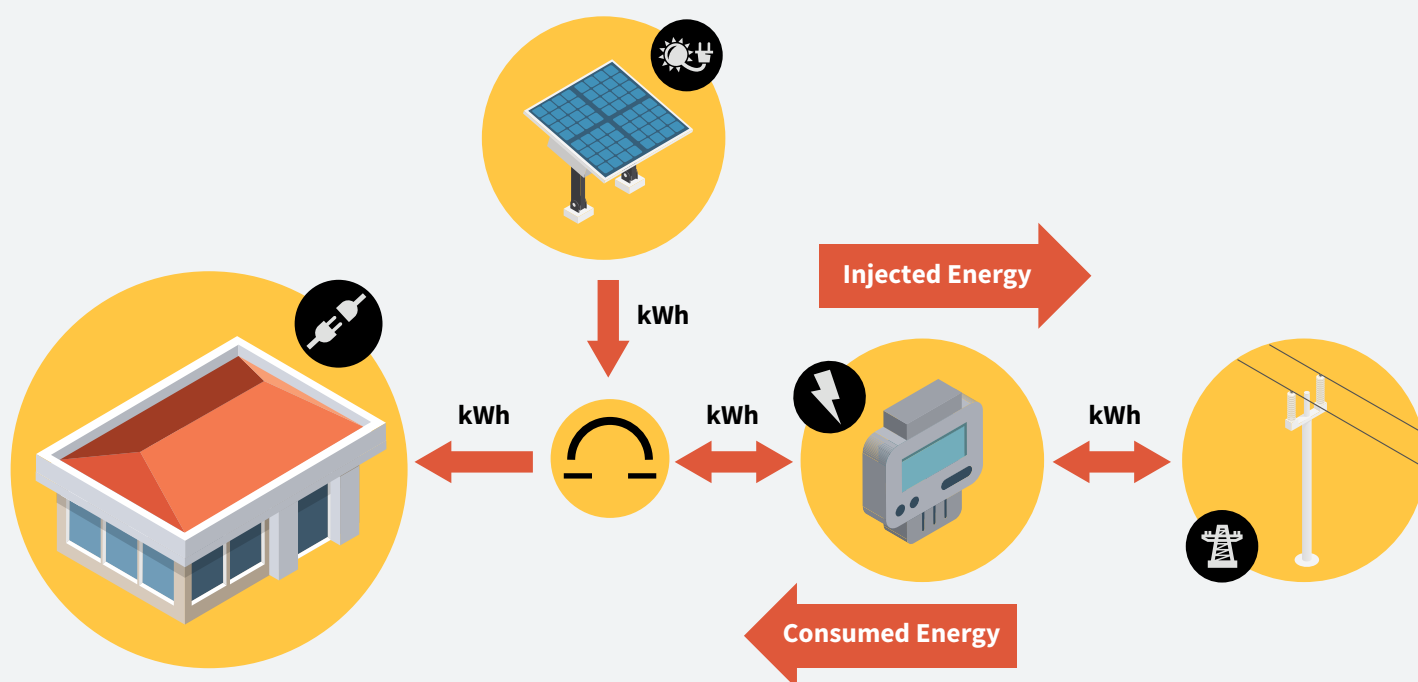


The scenario for the coming years reflects a reduction in the share of hydro plants and an increase in wind and solar sources, without making the country lose its position as a major renewable electricity generator.

Distributed generation showed a significant growth in recent years. It began in 2012, with the establishment of the microgeneration system (installed capacity up to 75 kW) and mini-generation (capacity between 75 kW and 5 MW)<sup>10</sup>. In both cases, the generation must come from a renewable source and be connected to the distribution grid through consumer units.

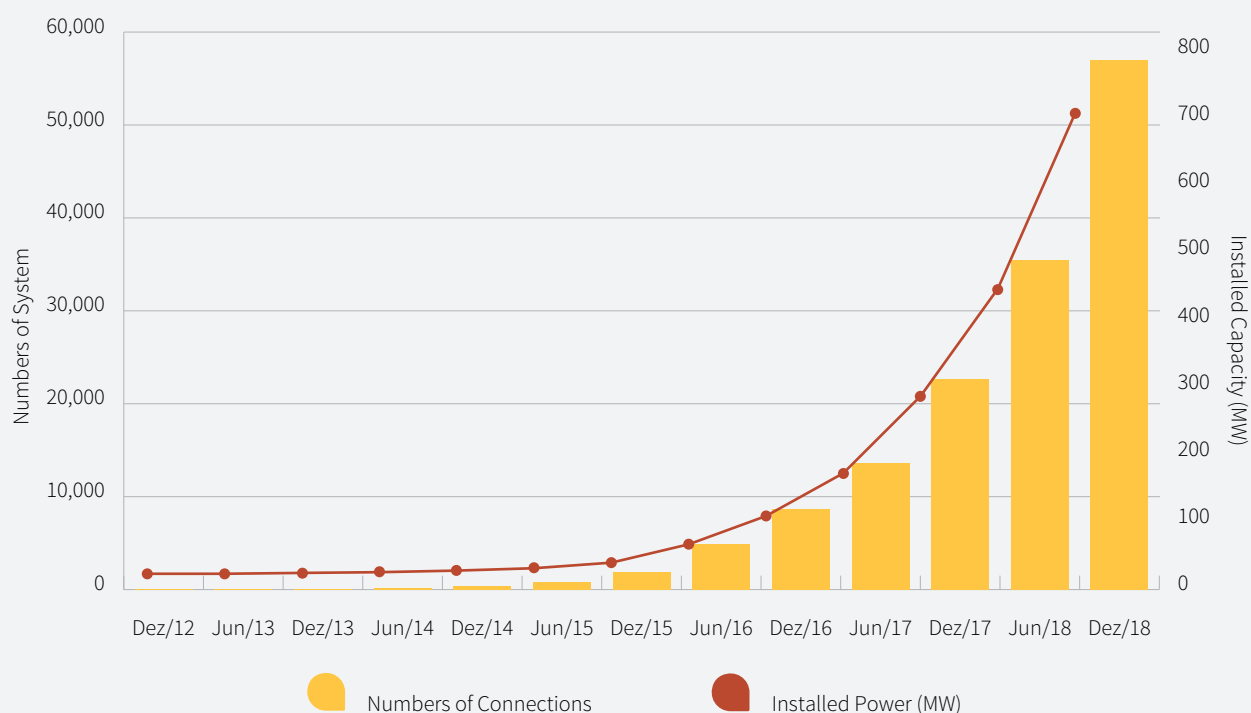
In the energy compensation system, power generated by consumer unit is injected into the local distributor grid and, later, compensated by the electric power consumed by the same unit or another under the same ownership. As a rule, the power injected turns into credit, which must be spent within 60 months. The consumer unit is billed through the Net Metering model.

### Net metering compensation system



10 [Normative Resolution No. 482/2012](#), of ANEEL.

## Distributed Generation in Brazil



Source: [ANEEL](#)

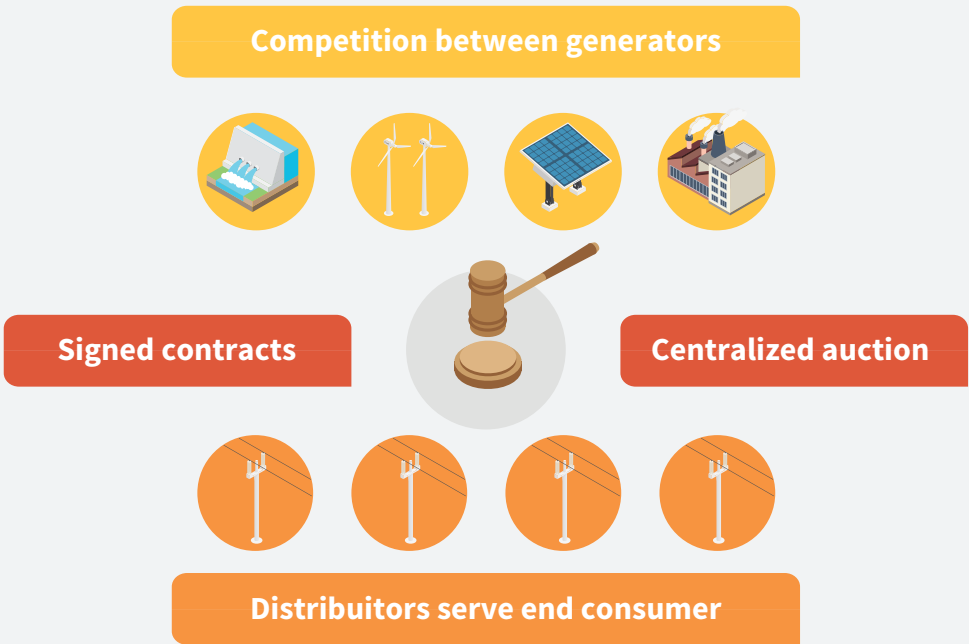
In the Electric Energy design, the power distributors are required to contract 100% of their load through regulated auctions<sup>11</sup>. The MME sets the bidding ceiling prices and the auctions are held by ANEEL and CCEE. The distributors sign long-term contracts - Power Purchase Agreement (PPA) with plant investors, which use the receivables as collateral for long-term financing. During the auctions, the investors compete for the concession of the plants and the commercialization of the energy. All contracting is made at the lowest price, in order to reach reasonable tariffs.

New energy auctions<sup>12</sup> occur at least 3 years (A-3), but no more than 6 years (A-6) in advance in relation to the beginning of the supply term. The contract duration varies from 15 to 30 years, according to the criteria defined in the bid announcement.

11 New Electric Energy Industry Model, 2004.

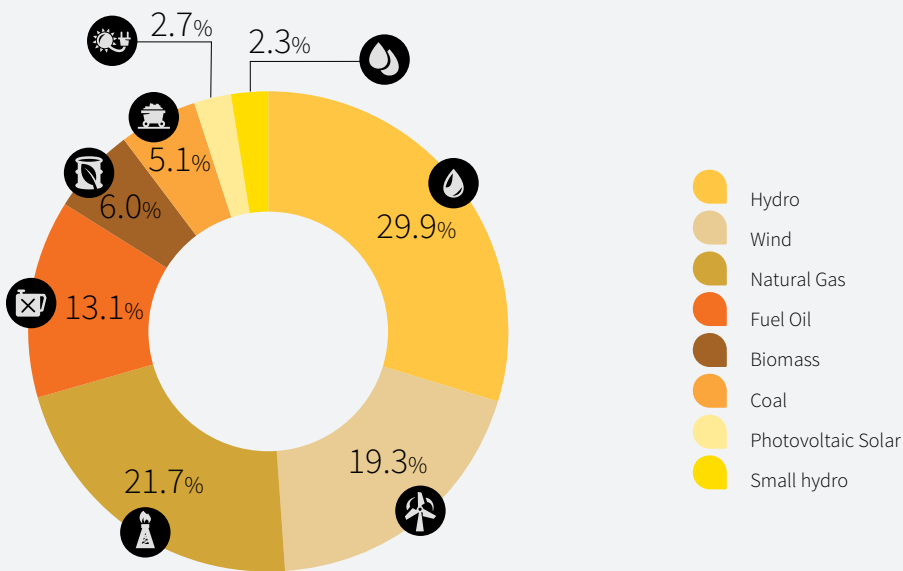
12 i.e., involving the construction of new ventures.

**Generation auctions in the regulated market (ACR)**



Since 2004, new energy auctions have traded over 40 GW avg at a medium price of R\$ 201.23.

**Expansion Contracted in Auctions - by source (% MW avg)**

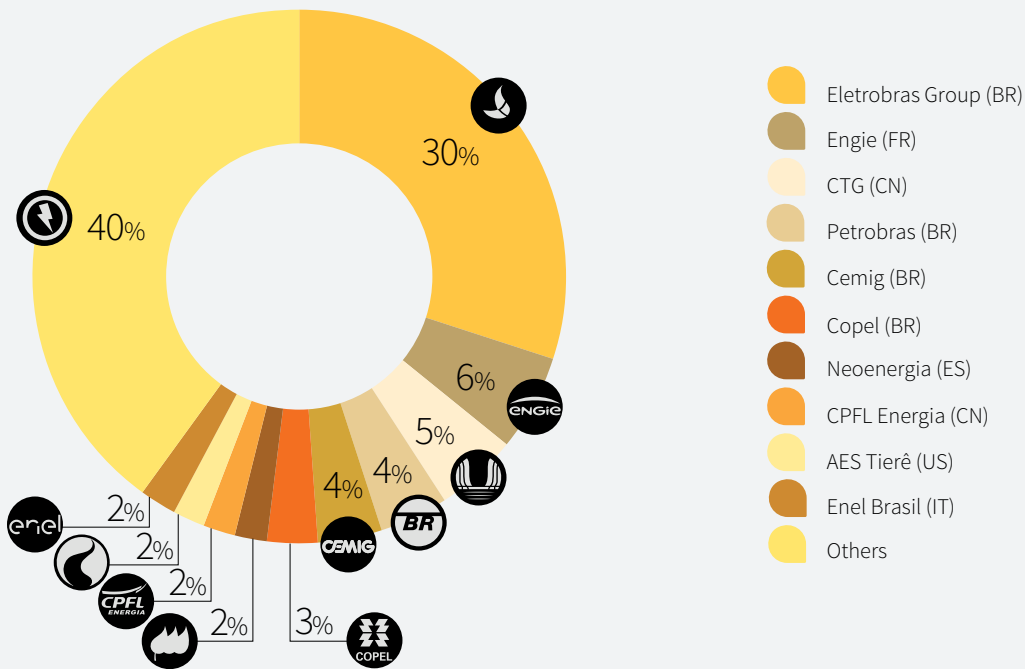


Source: [CCEE](#)

Despite the large inflow of private capital into the generation segment in recent years, state-owned companies (such as Eletrobras, Petrobras, Cemig and Copel) still hold a significant market share, accounting for 40% of the total generation capacity.

Regarding the origin of the capital of the generation companies, only 20% is foreign, and a good part thereof comes from state-owned companies of countries like China.

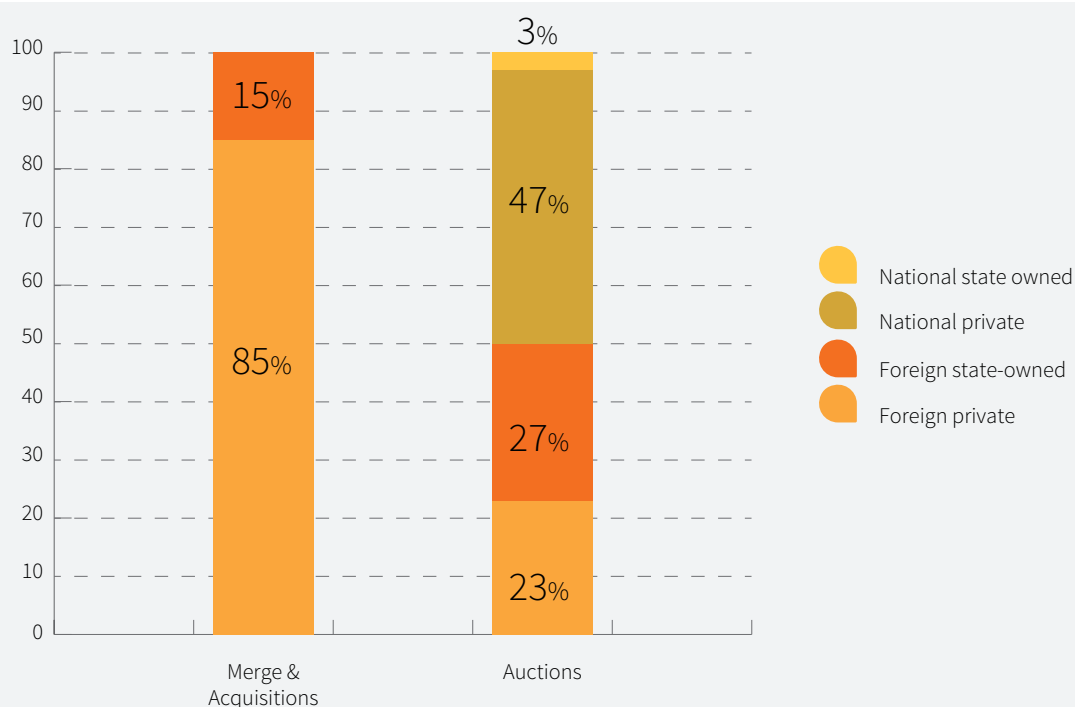
**Market Share - Generation (2018)**



Source: [ANEEL](#)

On the other hand, by reviewing the most recent M&A operations and generation auctions held over the last 3 years, one can see a significant share of foreign capital.

### Share by Type of Capital (2016-2018)



Source: [FGV](#)

### 9.3.3. TRANSMISSION

Brazil has a robust electricity transmission system - the National Interconnected System (SIN), which connects all states, except for Roraima. The system has more than 145 thousand km of lines carrying voltage above 230 kV.

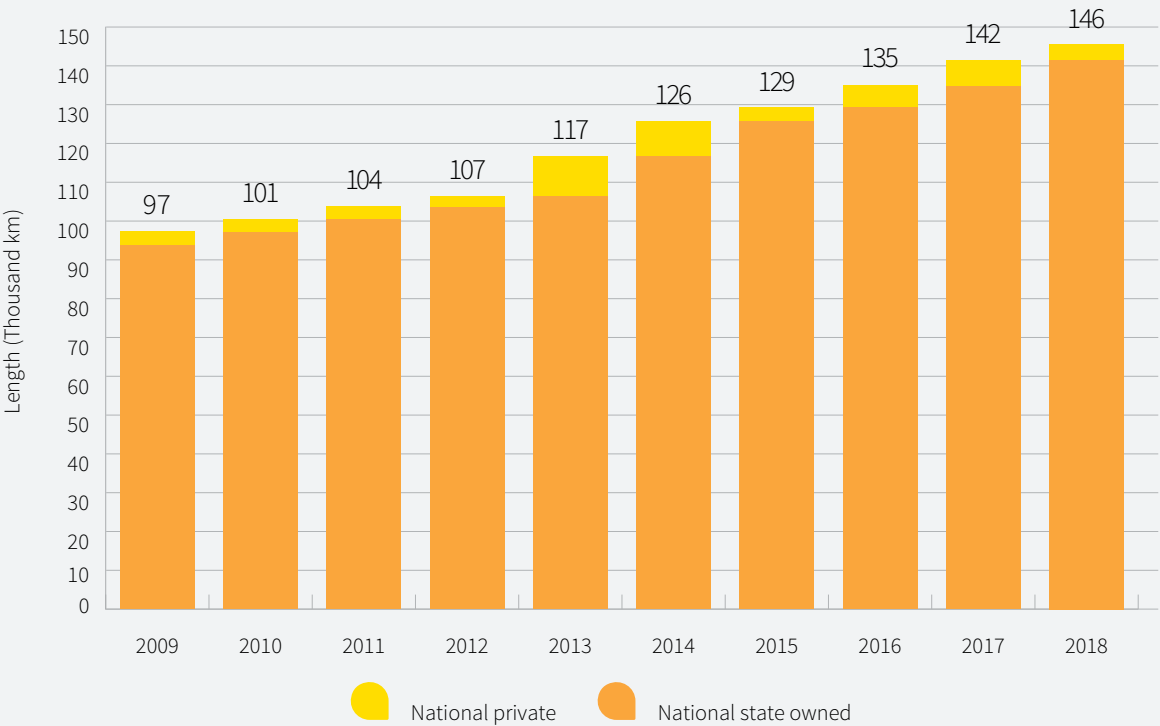
#### Power Transmission System - by voltage class

Voltage Class	Lines (km)	% Total
230 kV	58,438	40.2%
345 kV	10,319	7.1%
440 kV	6,756	4.6%
500 kV	50,363	34.6%
600 kV (DC)	12,816	8.8%
750 kV	2,683	1.8%
800 kV (DC)	4,168	2.9%
<b>Total</b>	<b>145,543</b>	<b>100.0%</b>

Source: [MME](#)

In recent years, generation expansion has taken place farther away from load centers, and therefore the transmission system has also evolved in order to keep up.

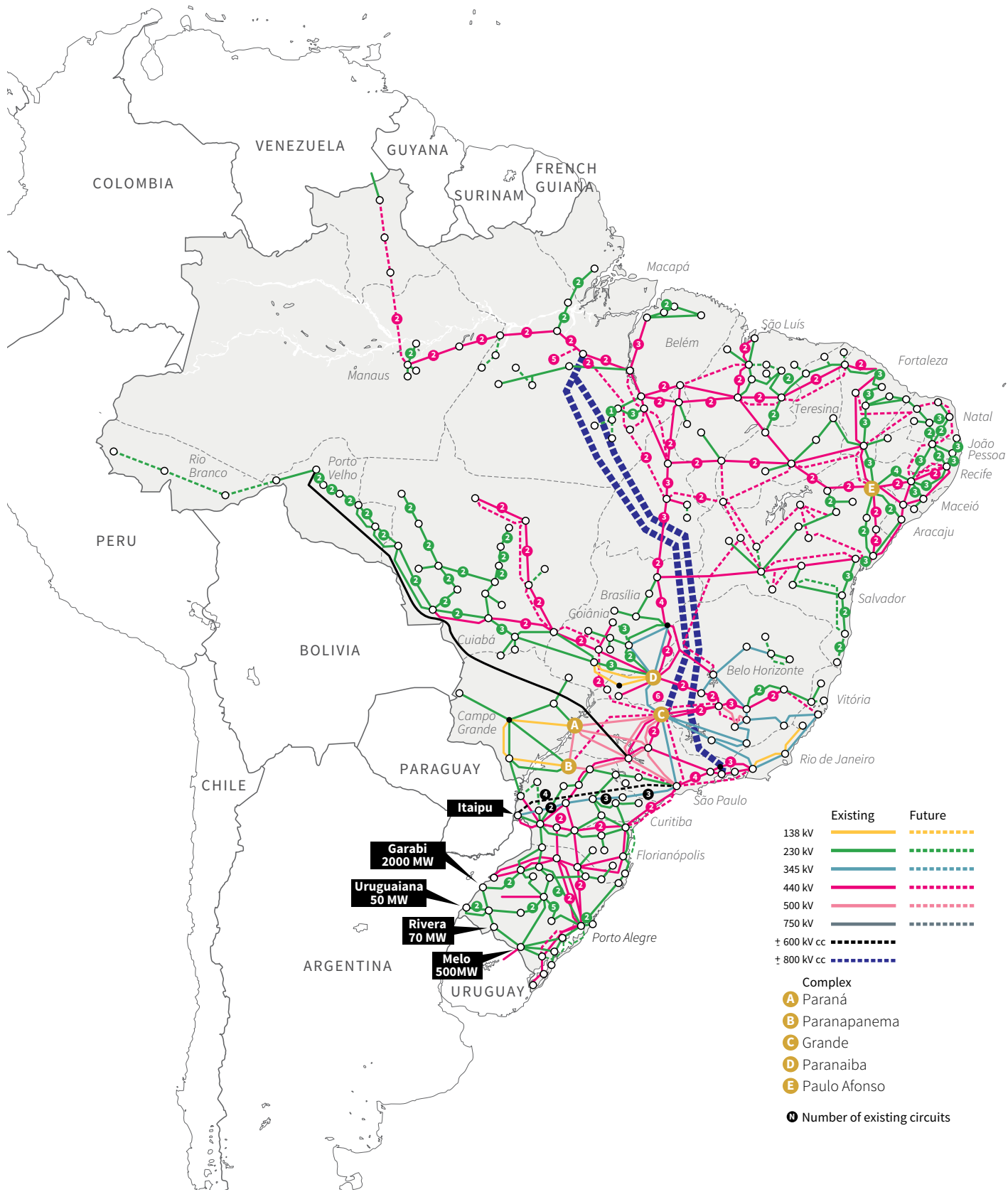
**Transmission Lines (thousand km)**



Source: ONS/MME

The National Interconnected System expands throughout the North and Northeast, due to the large hydroelectric plants built in the Amazon and to the wind and photovoltaic projects in the Northeastern backlands.

# National Interconnected System (2017)



Source: [ONS](#)

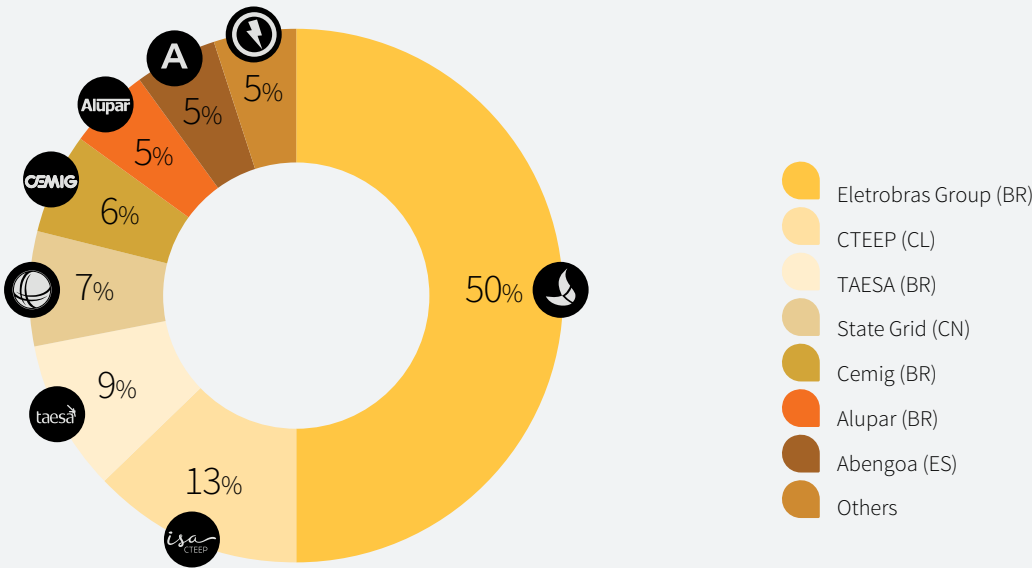
Transmission auctions have been designed to enable the concession of new lines and sub-stations for the market. The Government bids to the market, through ANEEL, the grant of new lines. The concession consists of line construction and operation for a period of 30 years, in exchange for a fixed annual income, annually updated for inflation.

The auction criteria are the Annual Revenue Allowed (RAP) that the investors bid for in each lot. The winner is the one who proposes the highest discount. The higher the discount, the lower the annual cost of the concession for the public coffers and for the population.

Since 1999, the year of the first transmission auction, almost 100,000 km of lines have been tendered. In nominal terms, the proposed RAP was R\$ 22.4 billion, but due to an average discount of 26.27%, the accepted RAP by the auction winners was R\$ 16.5 billion, representing an annual gain for consumers.

The transmission segment is even more concentrated than generation, being still under strong state control. The 4 largest players in the market account for 79% of the country's transmission lines, 50% of which under the control of Eletrobras group.

### Market Share - Transmission (2018)

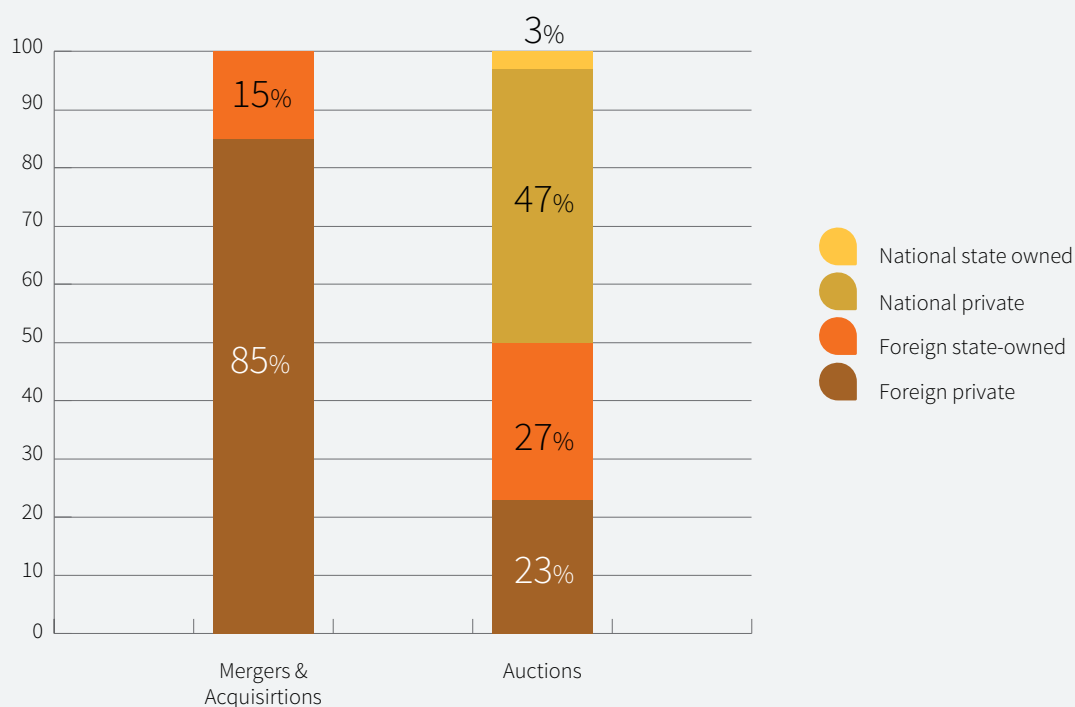


Source: [ANEEL](#)

A significant change has been noted also in recent transmission auctions and acquisitions, with strong inflows of private and foreign capital.



### Share by Type of Capital (2016-2018)



Source: [FGV](#)

### 9.3.4. DISTRIBUTION

The distribution utilities serve over 80 million consumer units throughout the country. The distributors are divided into concession areas and may occupy entire states or different geographic regions. There are 54 distribution concessionaires in the 26 states and the Federal District.

The 15 largest distribution utilities are responsible for serving 72% of consumers. The 8 largest concentrate 50% of the market.

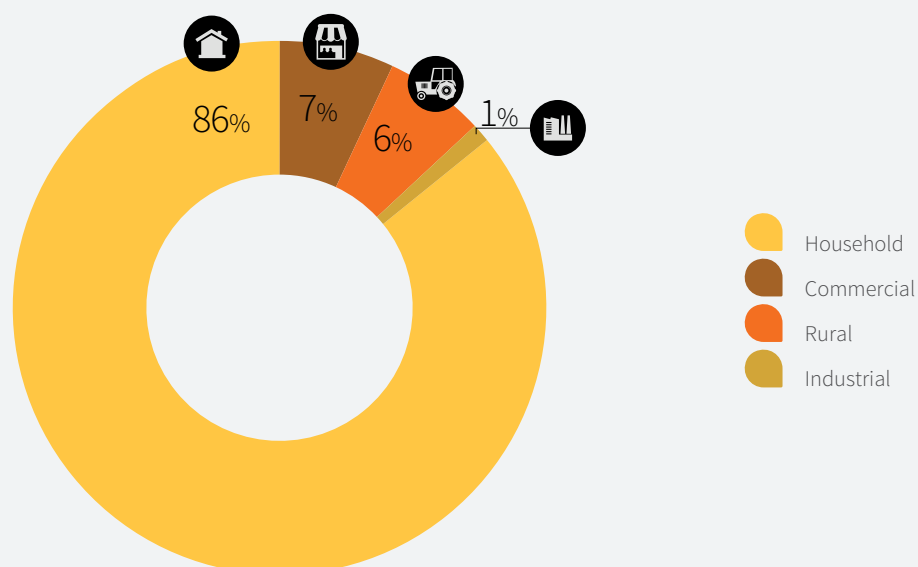
There is a significant difference in the consumption pattern among distributors, ranging from 398 kWh/month, on Celesc's average, to 195 kWh/month, on Cemar's average.

## Raking of the 15 largest distributors in the country (2018)

Distributor	Consumer Units	% total CU's	Annual consumption (MWh)	Consumption per CU (kWh/month)
Cemig (MG)	8,427,063	10%	25,320,957	250
Enel São Paulo (SP)	7,214,736	9%	32,299,416	373
Coelba (BA)	5,988,190	7%	16,515,308	230
Copel (PR)	4,637,804	6%	19,561,630	351
CPFL Paulista (SP)	4,423,385	5%	20,470,867	386
Light (RJ)	3,864,698	5%	18,517,166	399
Celpe (PE)	3,695,868	4%	10,905,213	246
Enel Ceará (CE)	3,543,253	4%	9,810,563	231
Enel Goiás (GO)	3,026,902	4%	11,050,838	304
Celesc (SC)	2,976,472	4%	14,214,329	398
Enel Rio (RJ)	2,666,088	3%	8,569,592	268
Elektro (SP)	2,658,301	3%	10,806,541	339
Celipa (PA)	2,643,582	3%	7,360,570	232
Cemar (MA)	2,491,750	3%	5,843,769	195
EDP SP (SP)	1,886,173	2%	7,940,242	351
<b>Total Brazil</b>	<b>83,633,657</b>			

Source: [ANEEL](#)

## Consumer Units - by class (2018)

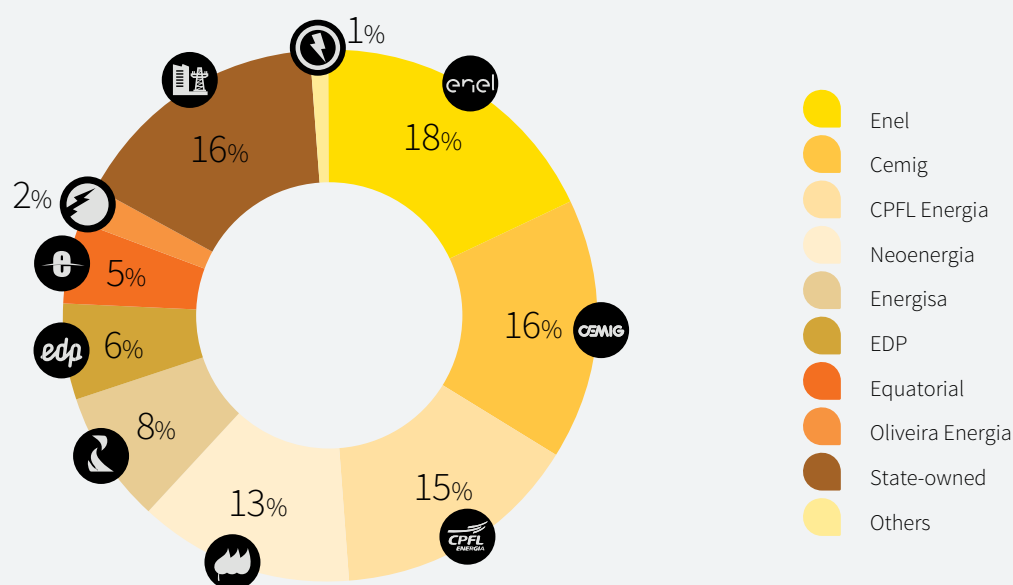


Source: [ANEEL](#)

Regarding shareholding, the distribution utilities have been consolidating. Currently, the 7 largest economic groups hold 82% of the market, while state companies account for 32%.

One can note that foreign capital has been playing a significant role in distribution. One hundred percent of the M&A capital made between 2016 and 2018 came from foreign companies, 96% of which are from foreign state-owned companies.

**% Distribution Market- by economic group (2018)**

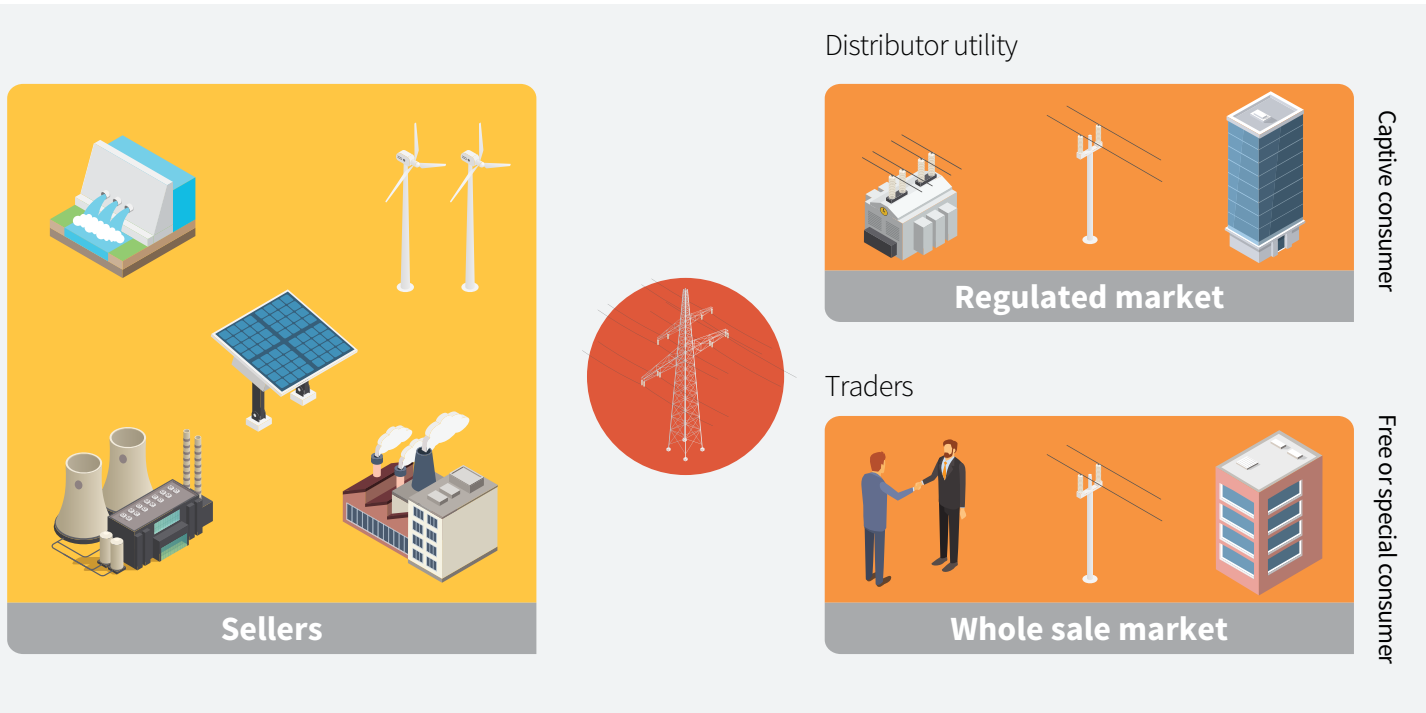


Source: [ANEEL](#)

### 9.3.5. WHOLESALE MARKET

In the regulated market, all contracting is made between generators and distributors through centralized pool auctions. In the wholesale market, bilateral agreements are signed between generation or commercialization agents and free consumers. Prices and risks are agreed between the parties without a regulatory action.

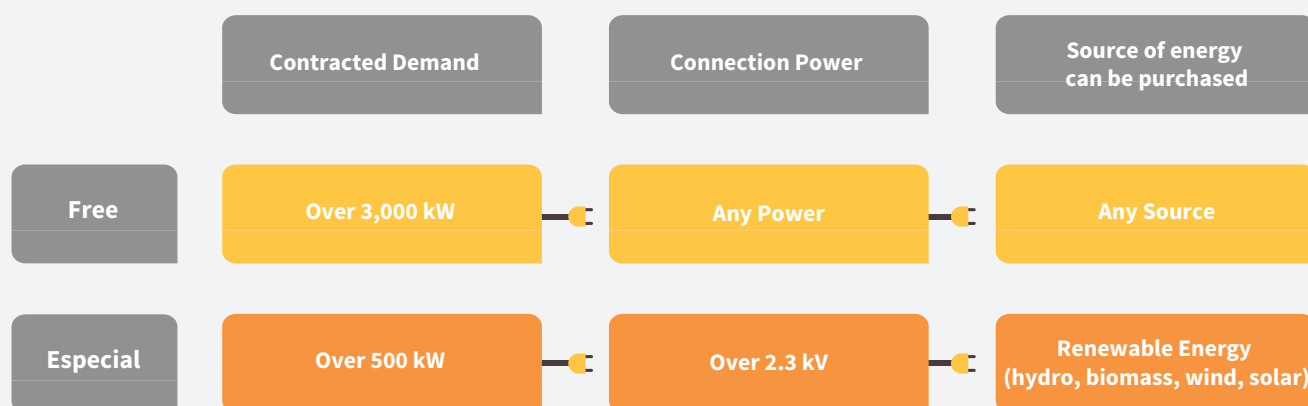
## Regulated market and wholesale market



The ratio of regulated consumers remained relatively steady over the years –a consumption of about 25-30%, showing a market that is still evolving. Recent projects point in the direction of total opening of the energy market in Brazil, in order to allow all consumers to freely buy and sell their energy, the distributor being responsible only for the physical delivery of the energy - distribution utility. This is a promising market that should grow the most in the coming years, bringing new investment opportunities in generation, commercialization and even in the financial area, with the growth of secondary market and the energy derivatives.

Currently, consumers of the wholesale market are classified into two groups: free and special. The diagram below presents the rule for wholesale market access for each type of consumer, taking into account the voltage and source of generation that is possible to buy.

## Rules to the wholesale market access<sup>13</sup>



According to characteristics of the power plant, special consumers may have discounts (from 50 to 100%) on the Tariffs for the Use of the Electricity Distribution Systems or for the Use of the Electricity Transmission Systems, making renewable sources even more economically attractive.

The power supply guarantee for the free consumer is obtained by registering the purchase and sale contracts in the CCEE. If the seller fails to deliver the contracted amounts, the buyer will still receive the energy, being CCEE responsible for the settlement operation.

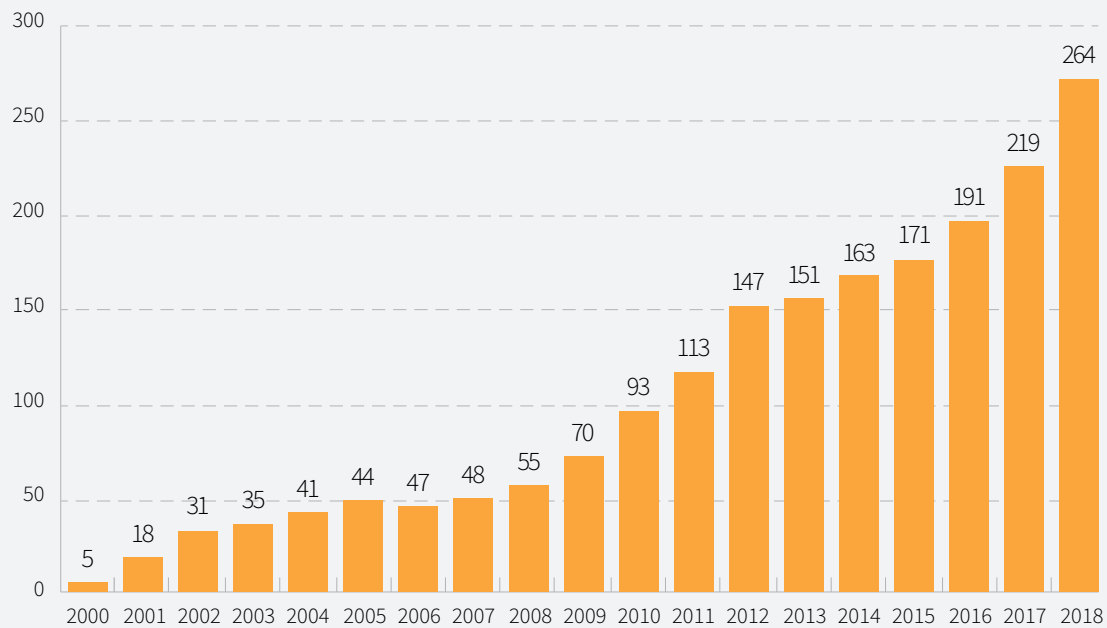
On the other hand, it is the buyer's responsibility to contract 100% of the energy required. If the consumption is more than that which was hired, the difference must be purchased on the short-term market, valued at the Spot Price (PLD)<sup>14</sup>, and bear any penalties.

Traders operate in the wholesale market by making transactions with generators and free consumers. They are responsible for adjusting the purchase and sale portfolios, balancing the market and reducing transaction costs. The trade market has been growing in the country year after year.

13 The MME Ordinance 514/2018 foresees the reduction of the minimum demand for the wholesale market from 3,000kW to 2,500 kW by July/2019 and to 2,000kW by January/2020

14 The PLD is a value calculated through mathematical models and found weekly for each load level based on the Marginal Cost of Operation, limited by a maximum and minimum price in force for each calculation period and for each submarket. PLD's weekly variations cause no impact over the values of previously contracted power.

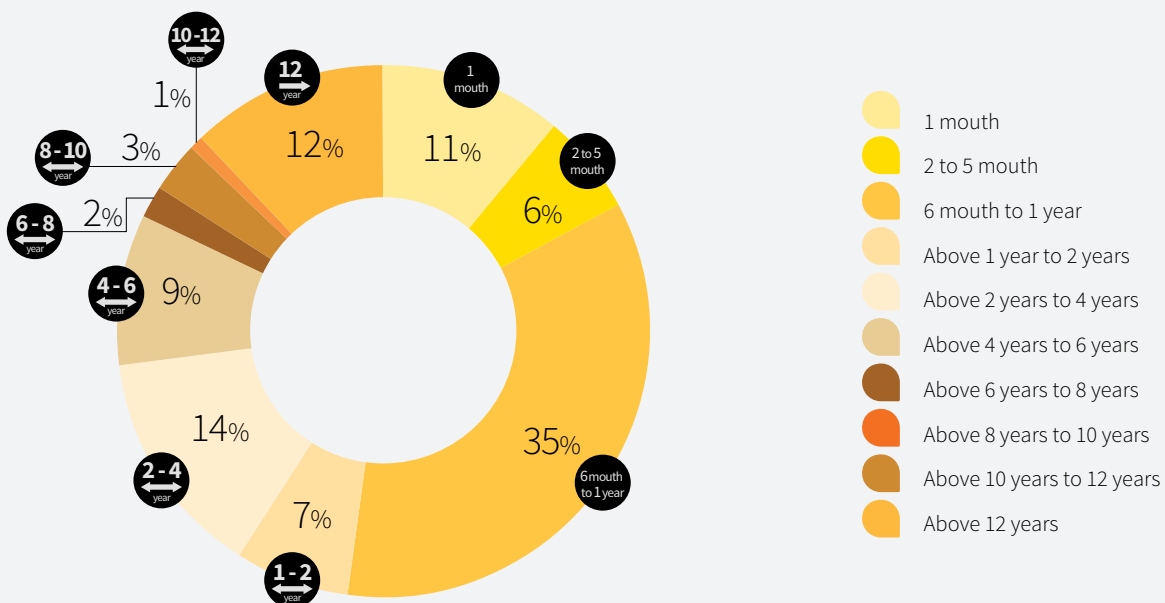
## Traders Evolution (2000-2018)



Source: [CCEE](#)

Another relevant characteristic of the wholesale market is the length of the contracts. Unlike the regulated market where 20-30-year contracts provide the guarantees required for expansion of the generation capacity, the wholesale market contracts are generally of a shorter duration.

## Duration of purchase contracts on the wholesale market (% amount)

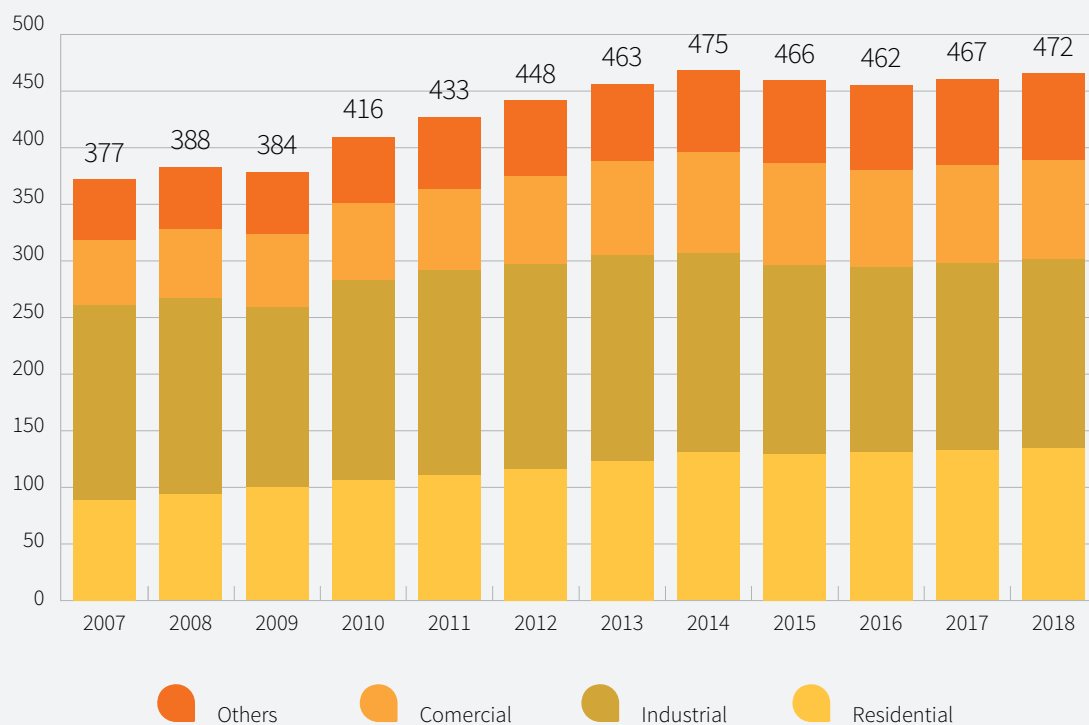


Source: [CCEE](#)

### 9.3.6. POWER CONSUMPTION

The electric power consumption shows a trend towards growth. From 2007 to 2014, consumption grew at a rate of 3.3% per year. Due to the economic crisis faced by the country since 2015, there was a slower growth rate, with a 2% decline in consumption in 2015 and 1% in 2016. Since 2017, there has been a slow recovery. Over the coming years, it is expected that consumption will continue to increase at a rate of 3 to 4%, which will require continuous investments in expansion of generation capacity.

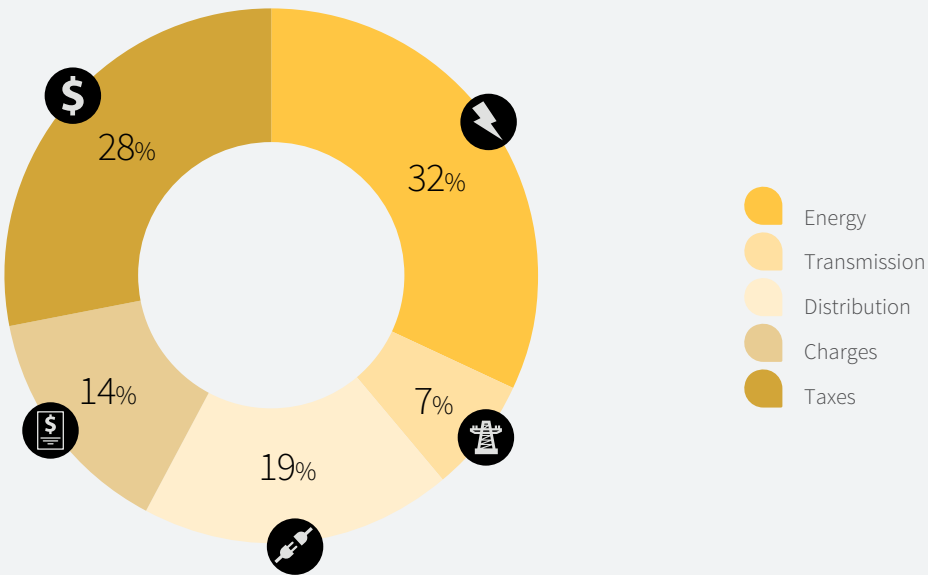
#### Electricity consumption - by class (%)



Source: [EPE](#)

It's noted that despite the small number of consumers, the industrial class still accounts for the largest consumption share, although its relative share has fallen since 2007. While during that year industries accounted for 46% of total energy consumption, by 2018 that percentage dropped to 36%.

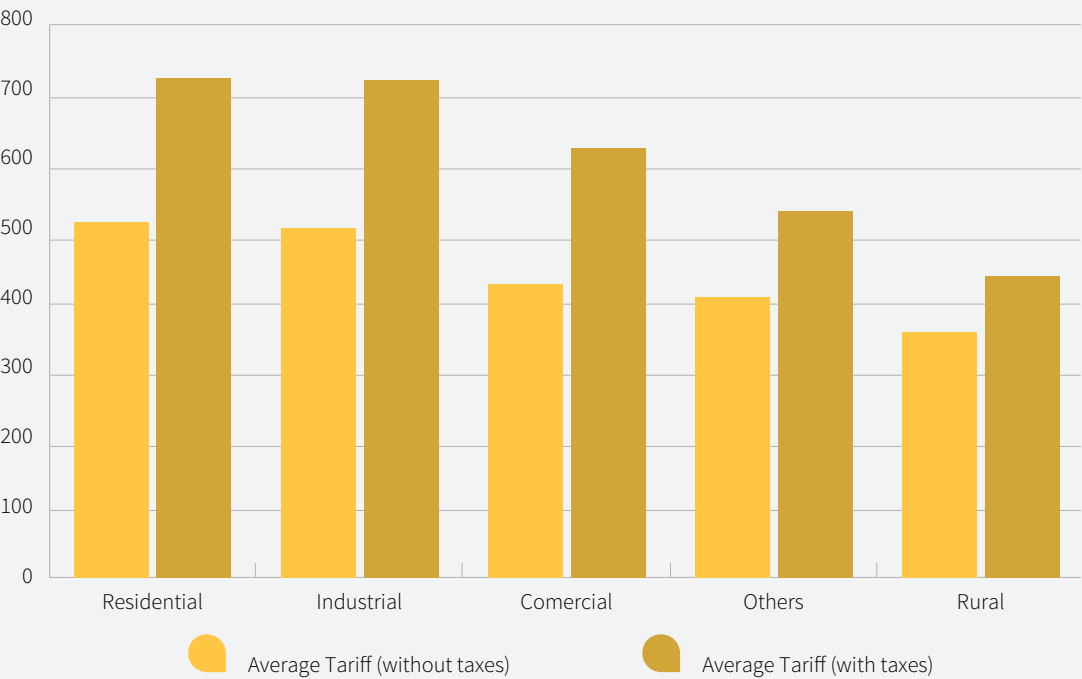
### 9.3.7. ELECTRICITY TARIFFS



Source: [ANEEL](#)

Tariffs vary widely between concession areas and even between consumption classes.

#### Average Tariff by Consumption Class (R\$/MWh)



Source: [ANEEL](#)



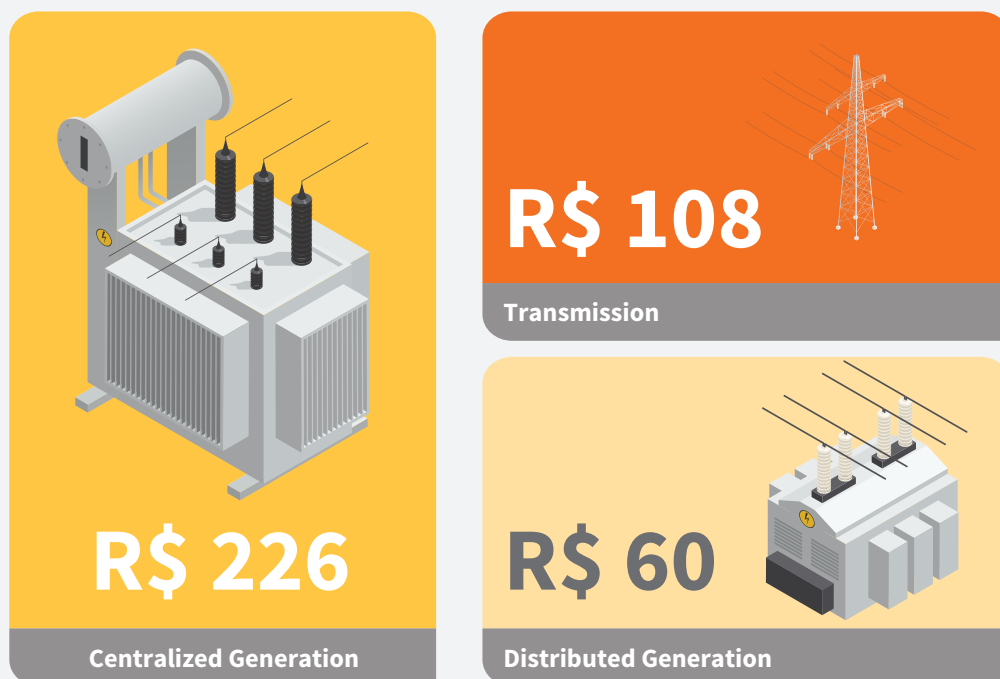
### 9.3.8. ELECTRIC POWER INVESTMENT OPPORTUNITIES

Brazil needs to expand its electric mix by more than 60 GW of installed capacity up to 2027 - being 40 GW between 2022 and 2027. Of the total amount, 10 GW should come from hydro-power, 14 GW from wind, 8 GW from solar and 8 GW from natural gas thermoelectric plants. This expansion will require investments in the amount of R\$ 226 billion.

In addition to centralized generation expansion, the country should also see an expansion of up to 12 GW in decentralized (distributed) generation, mainly in photovoltaic energy. Investments in this type of generation are expected to add another R\$ 60 billion over the next decade.

Finally, additional 55,000 km of transmission lines should be connected to the system, increasing grid reliability and allowing the rise in the generation offer. This transmission expansion and new substations will require investments of around R\$ 108 billion by 2027.

#### Investments in Electric Power by 2027 (billion R\$)



Source: [PDE 2027 \(EPE\)](#)

The electric power industry is expected to attract a total investment of almost R\$ 400 billion over the next 8 years, with several opportunities for private investors.

## 9.4. OIL AND DERIVATIVES

The oil and gas industry accounts for 13% of Brazil's GDP<sup>15</sup>. It is a key industry in the country that generates thousands of jobs and brings billions of dollars in investments.

Brazil is the 9<sup>th</sup> largest oil producer in the world and the largest in Latin America. In December 2018, the country's oil production reached 2.7 million barrels per day, and 1.5 million barrels (55.5% of the produced) came from the pre-salt fields<sup>16</sup>.

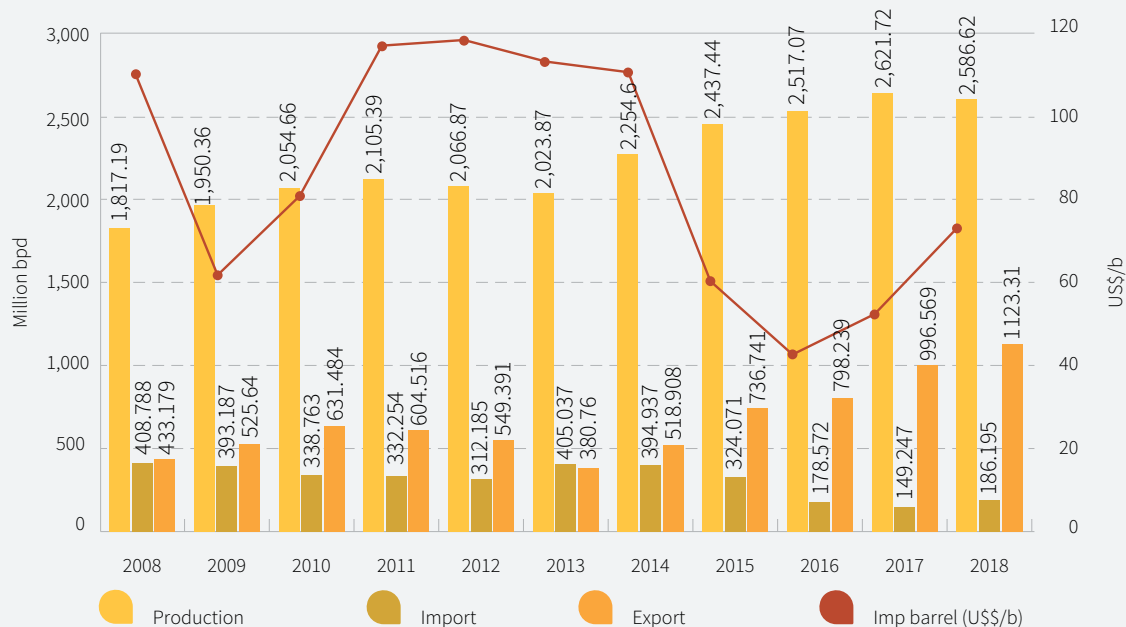
However, the country's oil industry is still a fraction of what it could be. Around 7% of the sedimentary areas are granted and only 30,000 wells were drilled in Brazil<sup>17</sup>. Argentina, with a much smaller area, has already drilled double that number and the US drilled millions of wells.

Therefore, there is a huge room for developing the oil and natural gas industry. Not surprisingly, it is expected to attract over the next 10-15 years investments of around R\$ 2 trillion.

### 9.4.1. EXPLORATION & PRODUCTION

In 2018, Brazil produced an average of 2.6 million bpd. Exports reached 1.1 million bpd, while imports were below 200 million bpd, thus generating a positive trade balance of US\$ 20 billion.

**Oil Production, Import and Export (million bpd)**



Source: [ANP](#)

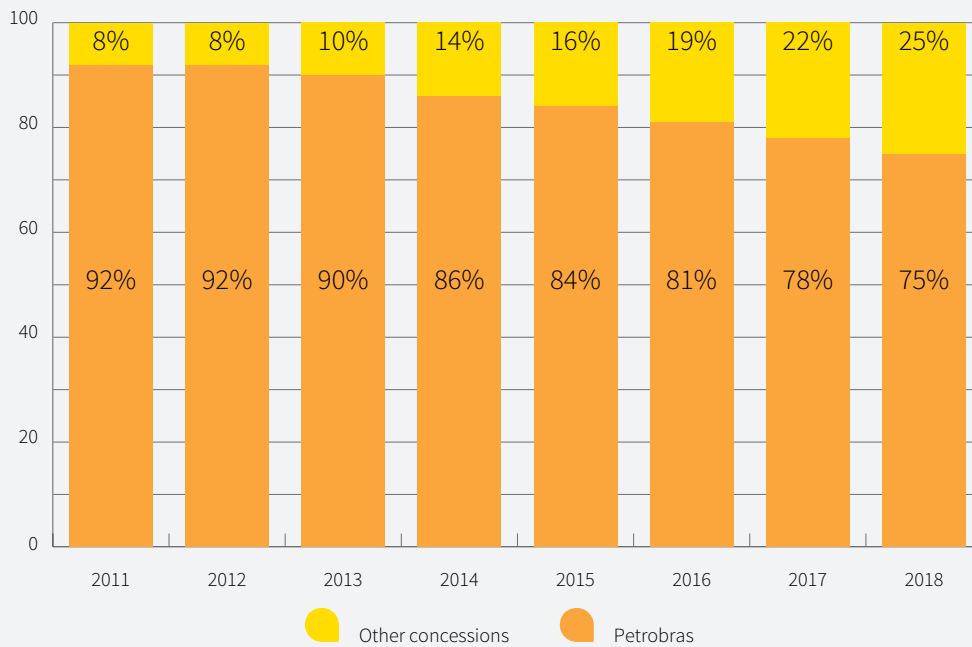
15 Associação Brasileira das Empresas de Serviço de Petróleo – (ABESPetro), 2017

16 ANP, 2018.

17 ANP, 2018.

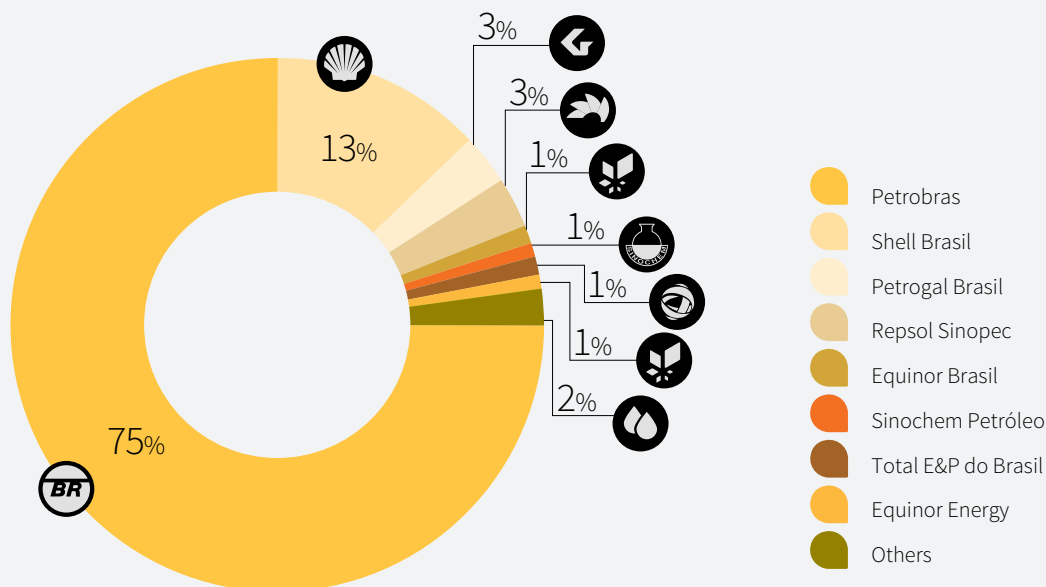
A significant change that has been taking place is the reduction of Petrobras share in oil production, while other companies, such as Shell, Petrogal, Repsol and Equinor, are beginning to take its place.

**Petrobras share in oil production (%)**



Source: [ANP](#)

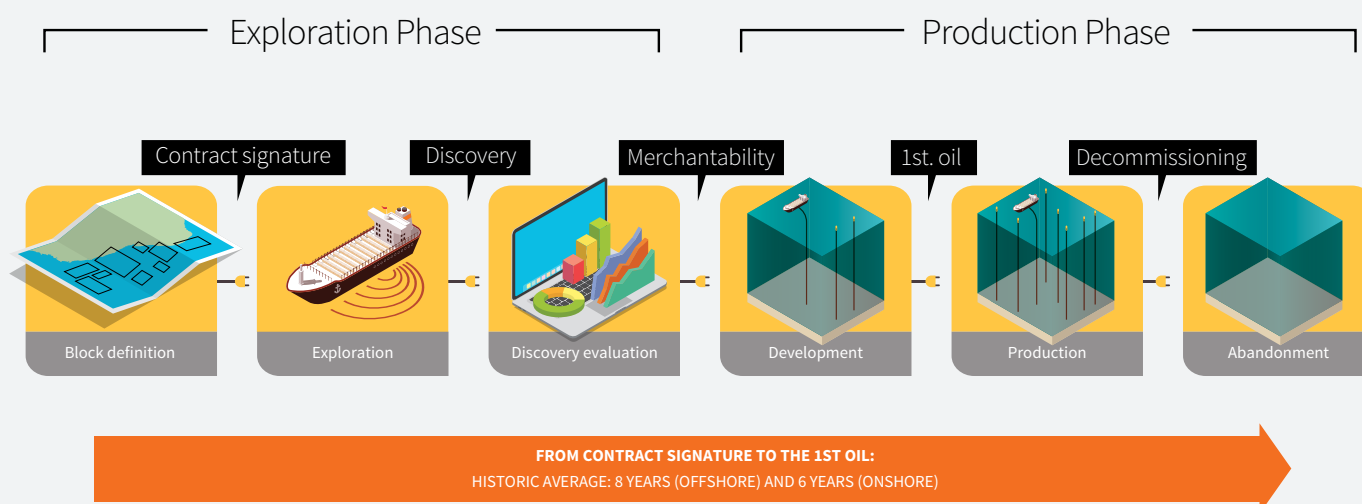
**Oil production - by concessionaire (2018)**



Source: ANP

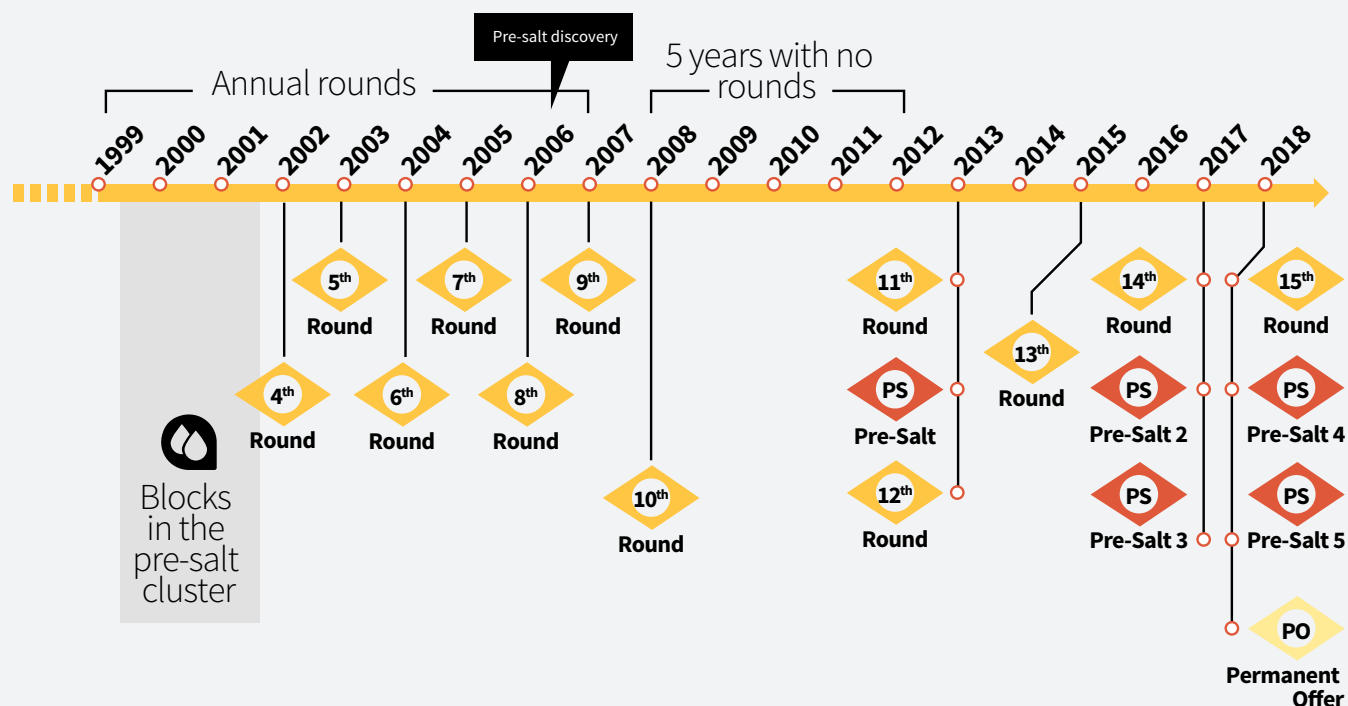
The duration of the E&P cycle in the country can be time consuming due to environmental licensing processes. For the offshore fields, it takes an average of 8 years from the moment of signing the contract to producing the first oil, for onshore it takes approximately 6 years.

### E&P Cycle in the country



The resumption of the schedule of annual bidding rounds is also worth mentioning. After 9 years of uninterrupted rounds (1999-2007), the country went through a long interval of uncertainties (2008-2012), without new rounds. The bids were resumed in 2013, but at no definite intervals. In 2017 the bids were resumed based on a foreseeable schedule of several years, showing predictability to investors and to the entire oil industry.

## History of bidding rounds

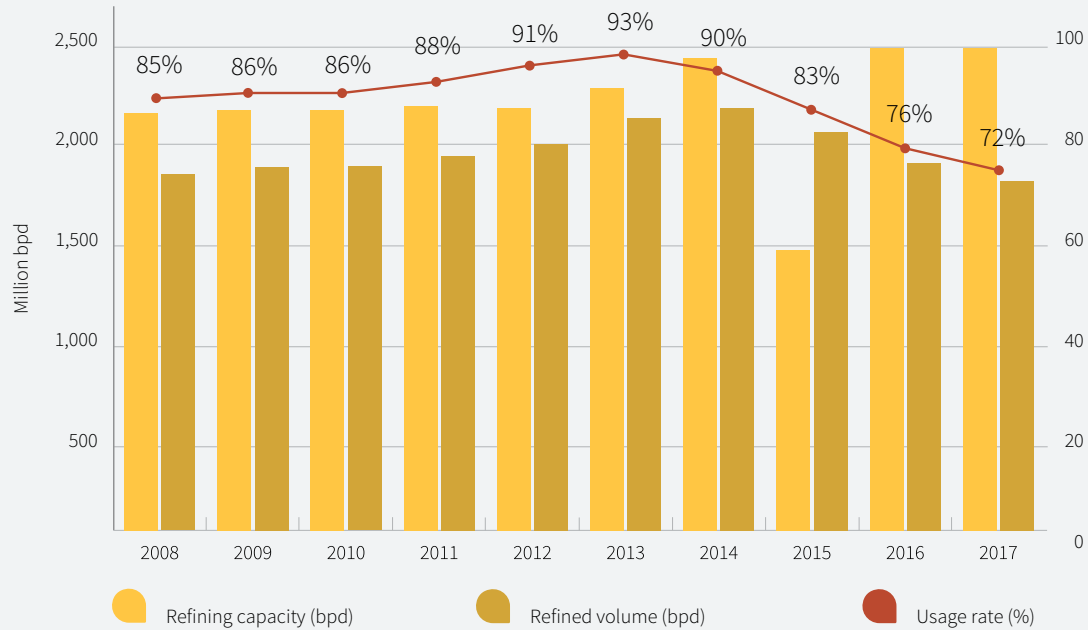


### 9.4.2. REFINING AND PROCESSING

In 2017, Brazilian refining relied upon 17 refineries with a capacity to process 2.4 million bpd. This ranks Brazil in 8<sup>th</sup> place in the world in refining capacity and in first place in Latin America. The utilization rate of the refining capacity was 72.4%. Of the total, 13 refineries belong to Petrobras, with more than 98% of the refining capacity. In 2017, only 1.4% of the oil was processed in refineries not belonging to the company<sup>18</sup>.

<sup>18</sup> ANP, 2018.

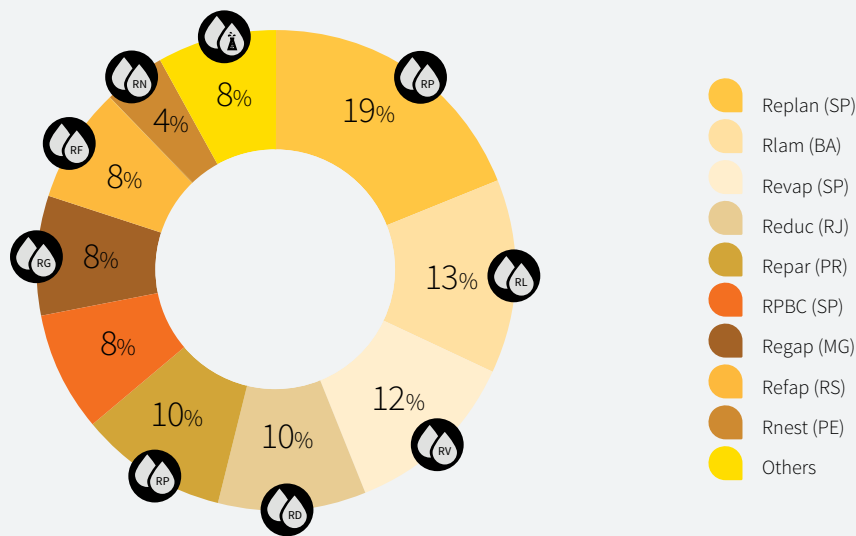
### Oil refining - capacity x processed volume



Source: [ANP](#)

In 2017, national refineries had a storage capacity of 5.7 million m<sup>3</sup> of oil and 10.6 million m<sup>3</sup> of oil by-products, intermediates and ethanol. The eight refineries in the Southeast Region concentrated together 57% of the national oil storage capacity (3.3 million m<sup>3</sup>).

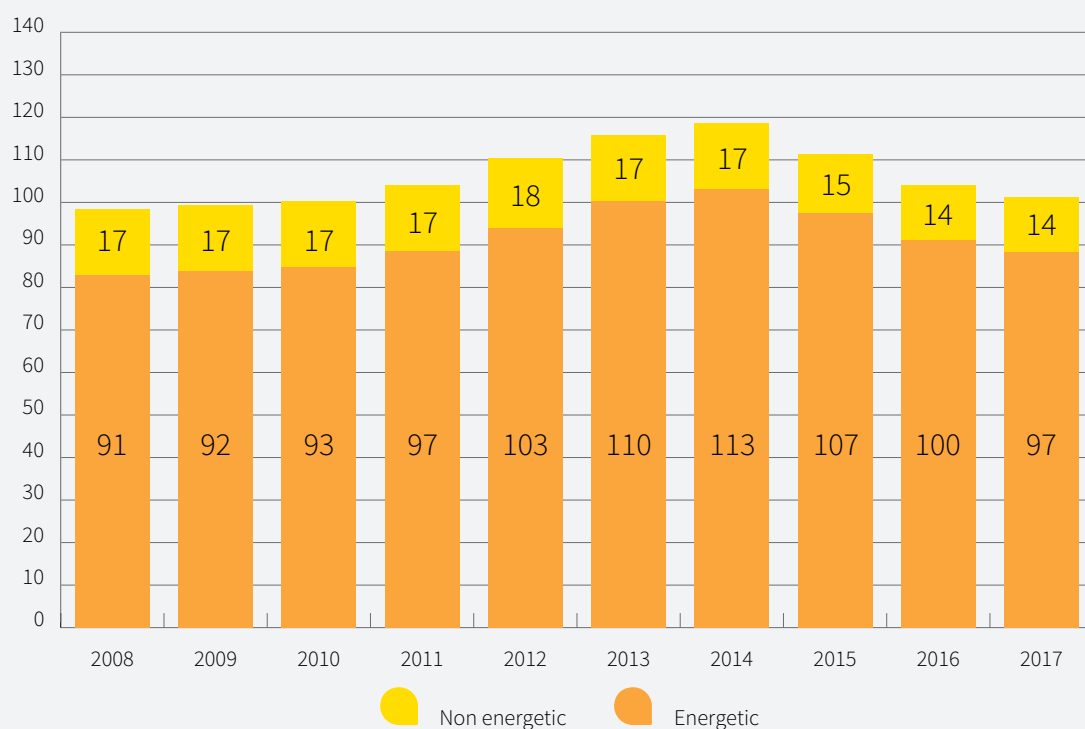
### Refineries share in the volume processed - 2017 (% total)



Source: [ANP](#)

In 2017, the Brazilian oil by-products production was 110.2 million m<sup>3</sup> - 3.7% less than the previous year. Of this volume, 96.1% (105.8 million m<sup>3</sup>) were produced in refineries, and the remainder was divided between petrochemical plants, Natural Gas Processing Plants and other producers.

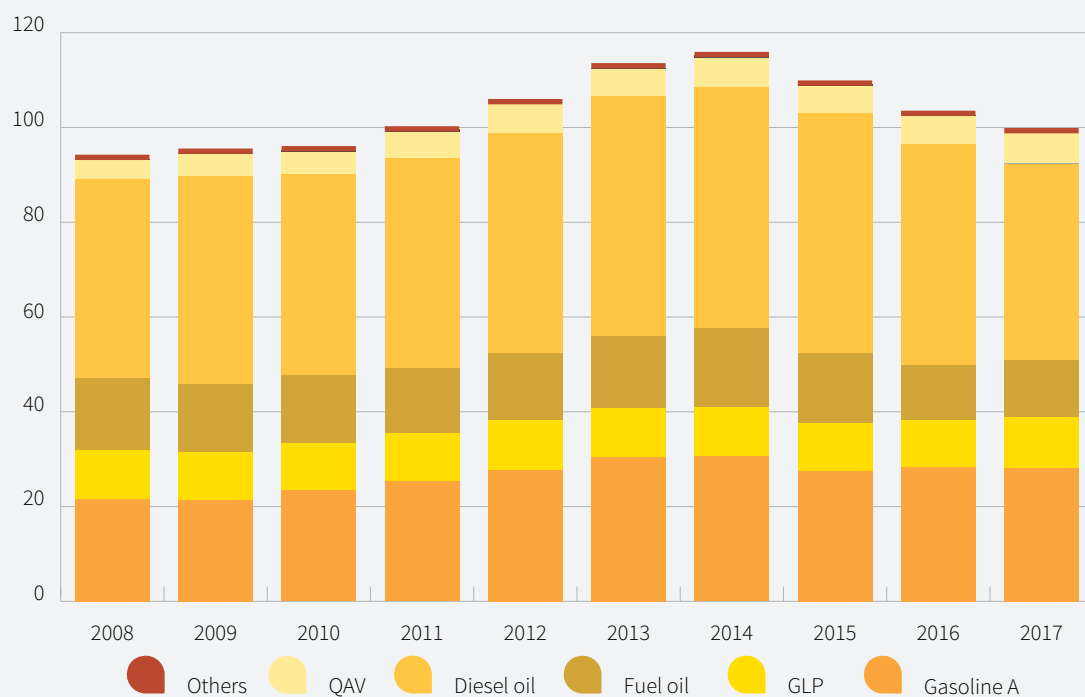
### Oil by-products Production (millions of m<sup>3</sup>)



Source: [ANP](#)

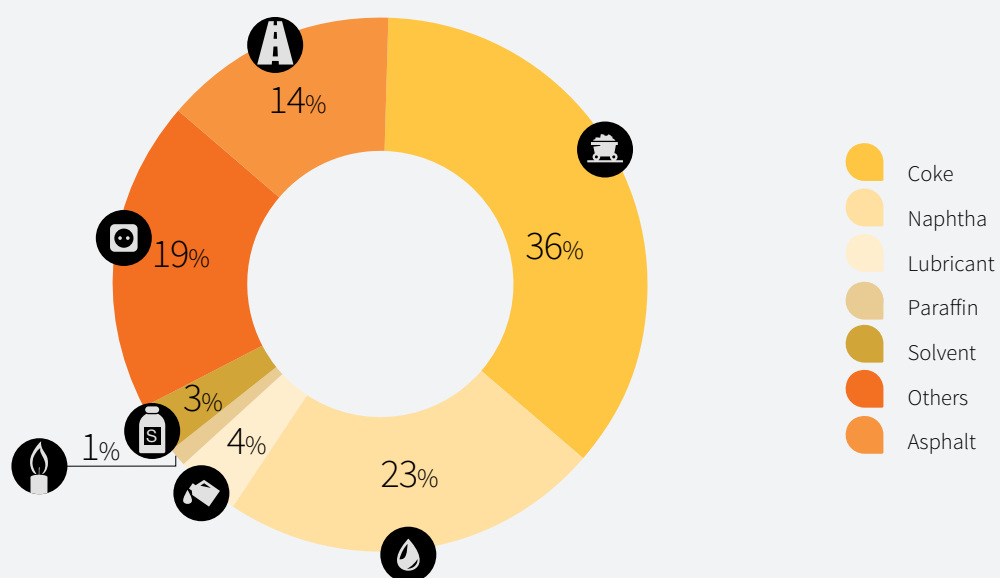
Among the energy by-products, Gasoline A and diesel prevail in production, accounting for more than 70% of the total.

## Production of energy by-products (million m<sup>3</sup>)



Source: [ANP](#)

## Production of non-energy by-products (%)



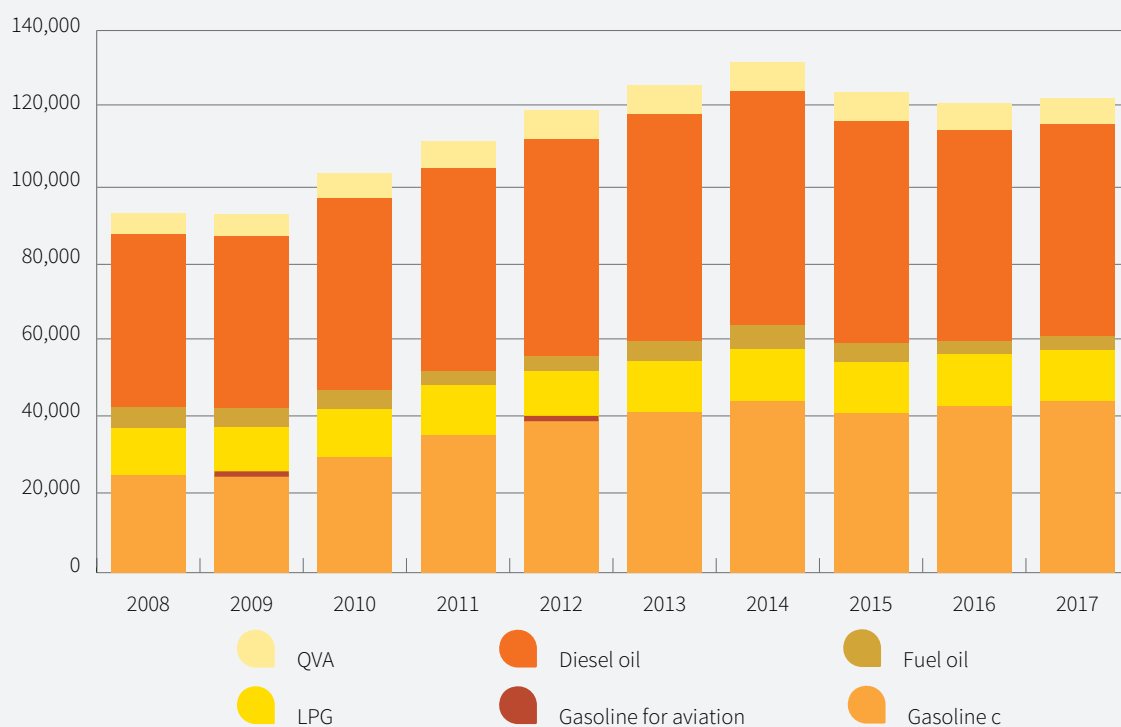
Source: [ANP](#)



### 9.4.3. DISTRIBUTION AND CONSUMPTION

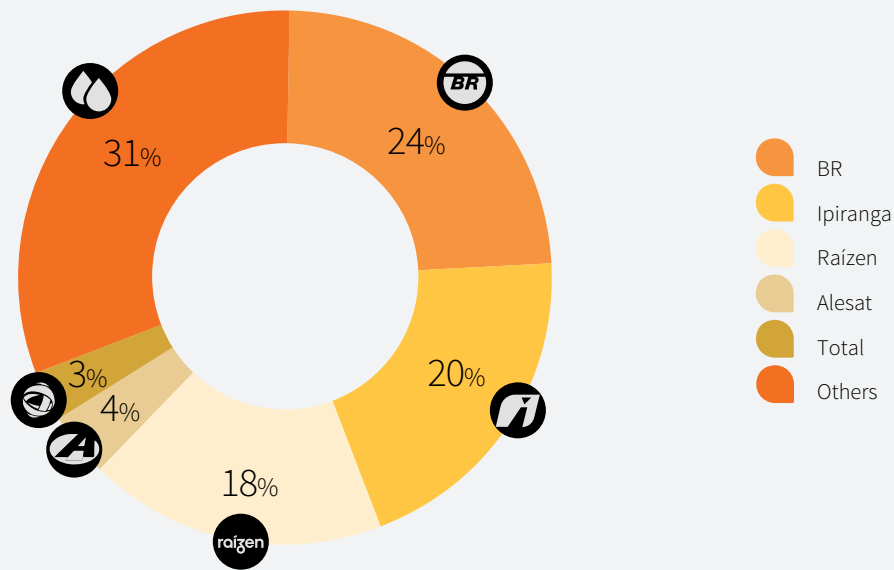
In 2017, the country was still emerging from the economic crisis, and marketed 122 million m<sup>3</sup> of oil by-products, i.e. a growth of 1.3% over the previous year.

**Domestic sales of oil by-products (million m<sup>3</sup>)**



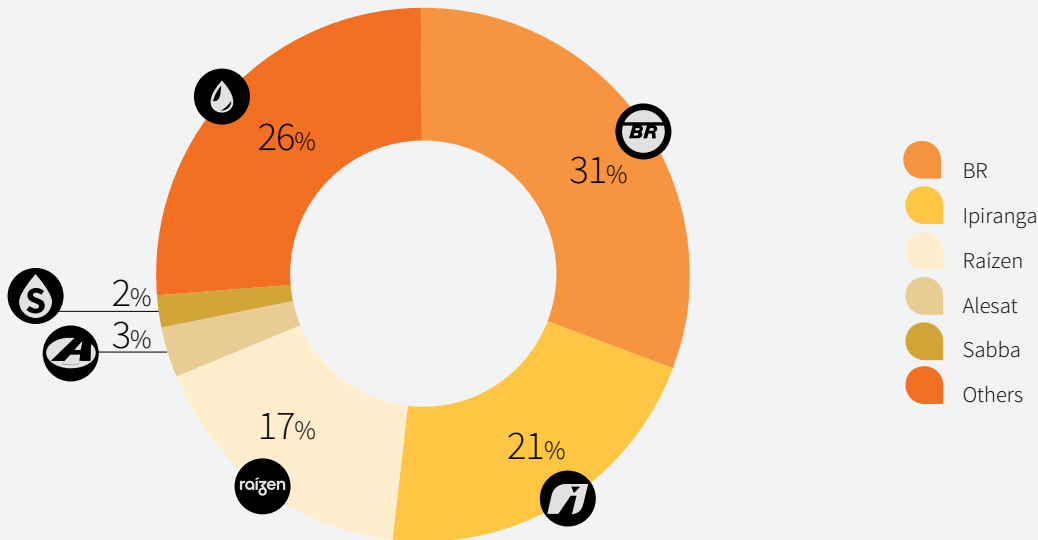
Source: [ANP](#)

**Share of distributors in Gasoline C sales (%)**



Source: [ANP](#)

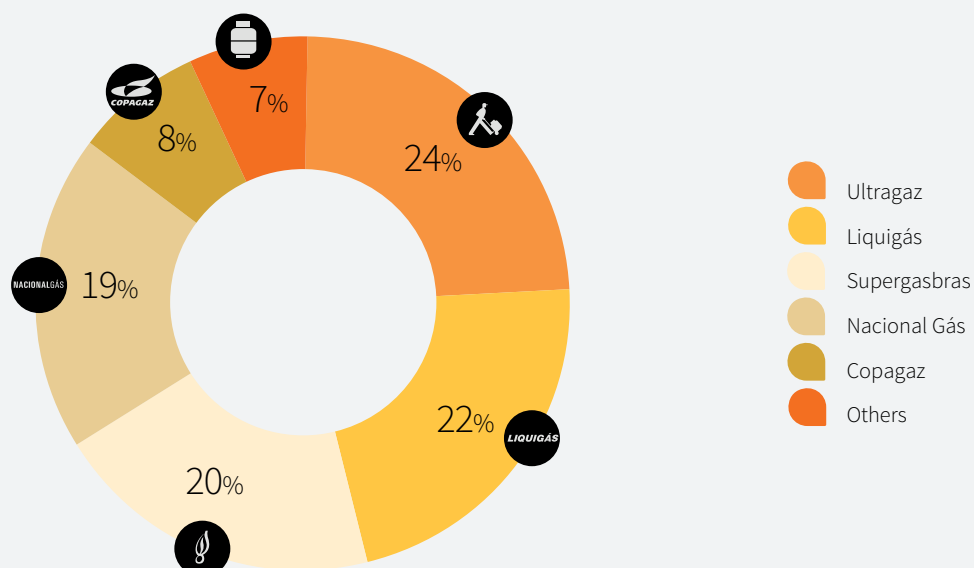
**Share of distributors in diesel oil sales (%)**



Source: [ANP](#)

In the Liquefied Petroleum Gas - LPG market, four distributors hold 85% of the volume marketed. Currently, Liquigás (a Petrobras subsidiary) is part of Petrobras' divestment plan, which will lead to an opportunity for at least one new player.

#### Share of distributors in LPG sales (%)



Source: [ANP](#)

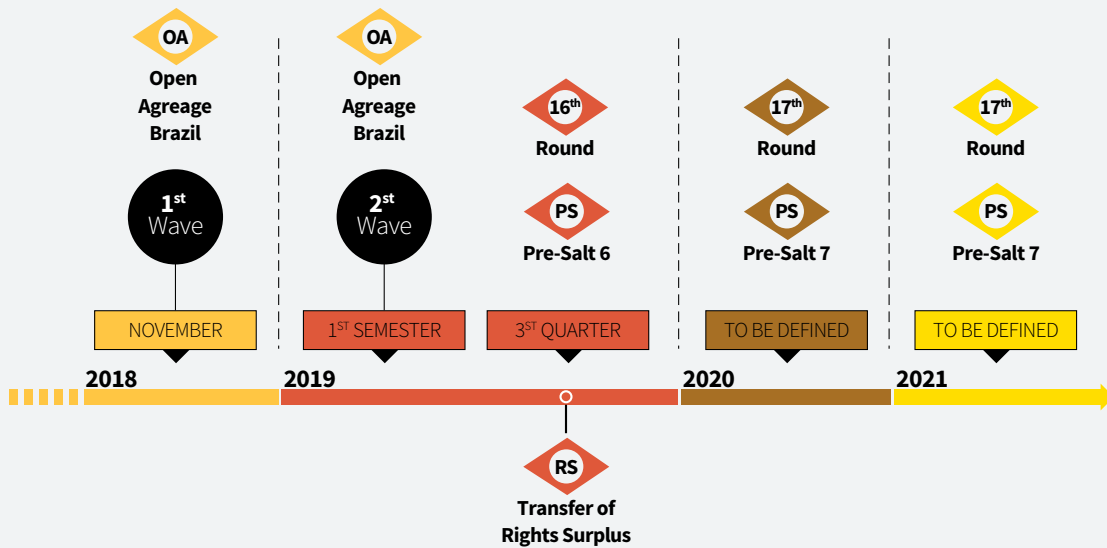
#### 9.4.4. INVESTMENT OPPORTUNITIES IN OIL AND DERIVATIVES

The oil and derivatives industry holds massive investment opportunities. This should attract investments of up to R\$ 2 trillion in the next 10 to 15 years, thus generating jobs and boosting the economy<sup>19</sup>.

The launch of a new bidding schedule shows predictability to the investors. There must be at least six new rounds by 2021, in addition to the surplus auction of the onerous transfer planned to take place in October 2019. The schedule will be updated as annual rounds are made.

<sup>19</sup> ANP, 2018.

## Schedule of the next Oil and Natural Gas bidding rounds

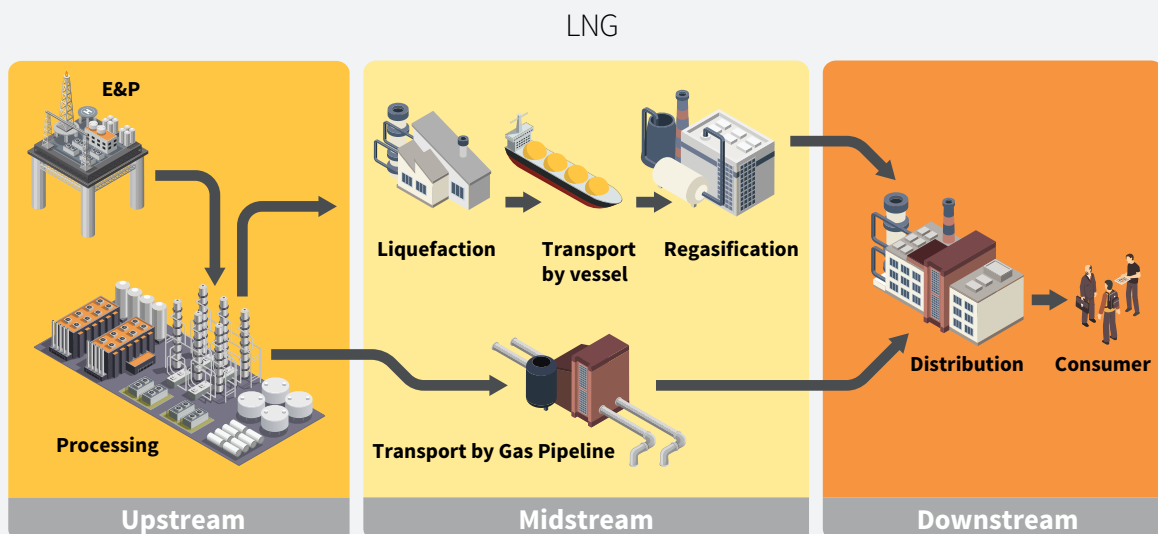


Source: [ANP](#)

In parallel with Petrobras divestment plan, the company has reduced its share in several segments of the production chain by selling assets and concentrating new investments primarily in exploration and production.

## 9.5. NATURAL GAS

### Natural gas value chain



In order for natural gas to gain space in the Brazilian energy mix - and its full potential as a transition fuel used - it is essential to: i) increase the number of suppliers and, thus, competition; ii) guarantee access by third parties to essential infrastructures (outlets, processing units and regasification terminals); iii) create an independent operator for the pipeline network; iv) greater strategic integration with the electric generation segment; and v) develop a secondary and short-term market, providing liquidity to the market.

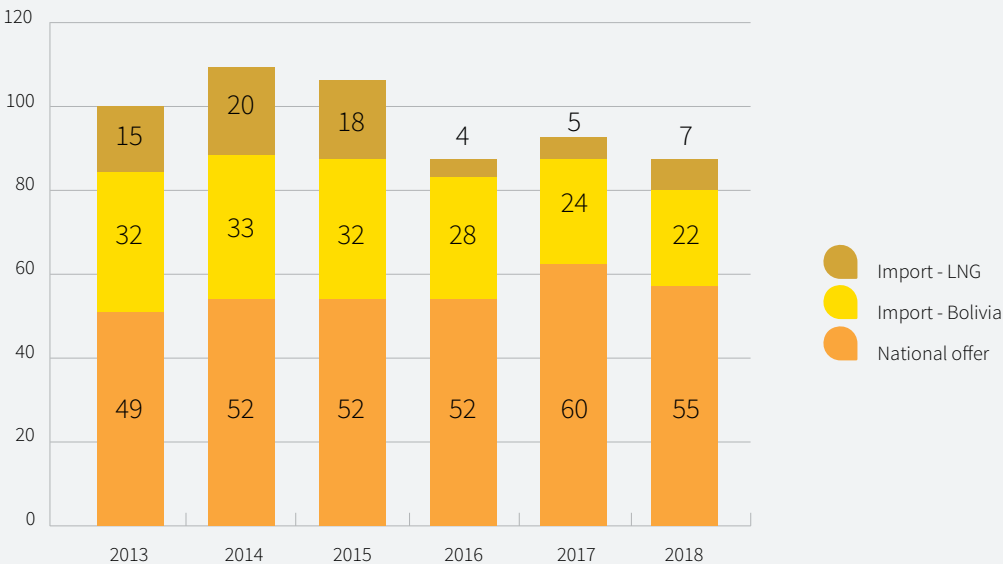
All these measures are in progress in the country at different stages of implementation. However, the expectation for the coming years is positive and everything points to the consolidation of a more dynamic market, with the entry of new agents and pricing and tariff transparency.

### 9.5.1. SUPPLY OF NATURAL GAS

The supply of natural gas has evolved in the past years, particularly in view of the contribution by new exploitation fields. At the same time, Bolivian gas imports declined, reflecting a drop in productivity of the country's fields. The reduction in Liquefied Natural Gas (LNG) imports in the last 3 years has resulted in lower demand - given that this offer is more flexible and is aimed at supplying the consumption of thermoelectric plants.

The expectation for the coming years is a growing supply of domestic natural gas, with an estimated increase of 70% in net production by 2027<sup>20</sup>.

**Annual Average Supply of Natural Gas (million m<sup>3</sup>/day)**



Source: [MME](#)

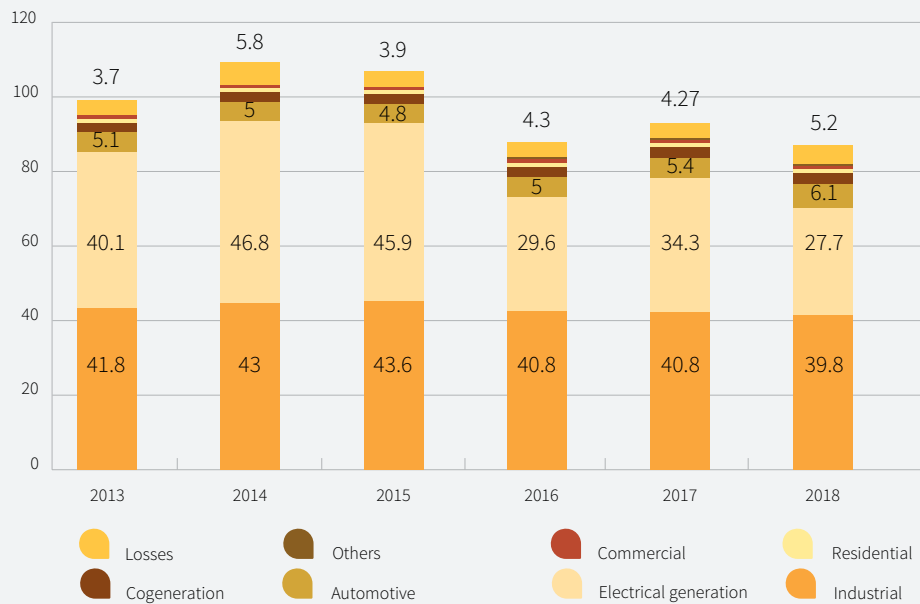
20 PDE 2027 (EPE)

### 9.5.2. CONSUMPTION OF NATURAL GAS

On the demand side, industry consumption has remained nearly stable since 2013, showing a slow recovery of the economic activity. The thermoelectric generation in the period from 2016 to 2018 was lower than the previous three years, due to the relative improvement in the hydro generation scenario. Despite of their growth, other segments do not play a significant role in the total gas demand.

With the expected entry of new natural gas thermoelectric plants, demand is expected to keep growing in the coming years, varying as the industrial activity is resumed.

**Annual Average Consumption of Natural Gas (million m<sup>3</sup>/day)**

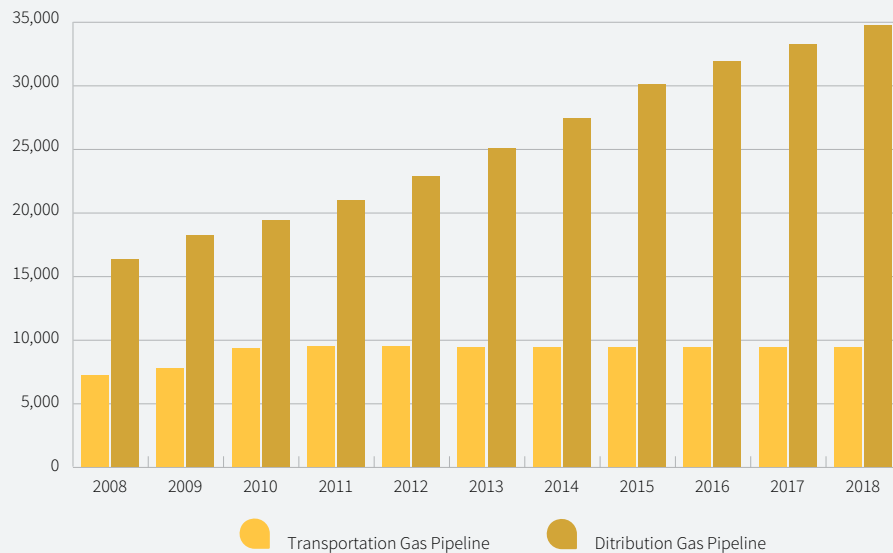


Source: [MME](#).

### 9.5.3. NATURAL GAS PIPELINES

The natural gas pipeline network remains virtually stagnant, while the distribution network grows year by year, more than doubling its length since 2008.

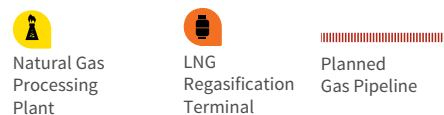
#### Evolution of Pipelines Networks (km)



Source: [MME](#)

Basically, the natural gas pipelines are located along the coast, with the exception of the Urucu-Manaus and Brazil-Bolivia pipelines. The map shows the location of three LNG regasification terminals in operation (Rio de Janeiro, Bahia and Ceará) and the Natural Gas Processing Plants - all owned by Petrobras.

Source: [EPE](#)





#### **9.5.4. DISTRIBUTION UTILITIES**

Natural gas distribution is under responsibility of the States, which can provide the service either directly or indirectly through [concessions](#). With the exception of three states (Acre, Roraima and Tocantins), all the others have a state or private-owned natural gas distribution utilities. In Rio de Janeiro the service is provided by two concessionaires (both owned by Naturgy), and in São Paulo by three different companies (Comgas, Naturgy and Gas Brasileiro).

Currently, Petrobras holds shares in 20 of the 27 distribution utilities, in partnership with Mitsui and state governments. Several States do not yet have specific regulations, and it is still an area to be developed in the coming years.

#### **9.5.5. NATURAL GAS INVESTMENT OPPORTUNITIES**

According to [Petrobras divestment plan](#), important assets of the natural gas industry have already been sold. In 2015, 49% of Gaspetro, a state-owned subsidiary that operates in 21 of the country's natural gas distribution companies, was sold. In 2016, 90% of the company's stake in the Southeast pipeline network (NTS) was sold for US\$ 5.2 billion.

Petrobras divestment plan is expected to open up opportunities at every stage of the gas value chain. In the upstream, the sale of exploration fields has the potential to increase the number of gas suppliers. In the midstream, the sale of TAG and the potential sale of the stake in TBG (Brazil-Bolivia pipeline) will change the transportation scenario. In the downstream, the company's remaining stake in Gaspetro is expected to be sold. This will enable new players to operate in gas distribution in the country.

Finally, the sale of natural gas thermoelectric plants and LNG terminals is also expected, which should further limit Petrobras' share in the segment, opening up countless possibilities for investments.

ANP's new bidding rounds will open opportunities for investment in new exploration and production fields. With the new regulation of the transportation segment, fresh opportunities for investments in pipelines should also arise, given the country's shortcomings in this area.

## 9.6. LEGAL AND REGULATORY FRAMEWORK

[Decree No. 24,643/1934](#), known as the “Water Code”, it sets the legal bases for the electric power business in Brazil. It was the first Law that covered the subject and its provisions are still a reference for electric power generation.

[Law No. 2,004/1953](#), created Petrobras and established the Federal Government’s monopoly on oil research, exploration, refining and transportation in the country.

[Law No. 3,890-A/1961](#), created Eletrobras, a company that consolidated the rule of the State in the expansion of energy supply, and in the electric industry planning and financing.

[The Federal Constitution of 1988](#), established the Federal Government’s jurisdiction to explore, directly or through authorization, concession or permission, electric energy services and installations. Kept the Federal Government’s and Petrobras monopoly in the oil industry<sup>21</sup>. As far as natural gas is concerned, the law provides that it is the responsibility of the States to operate, either directly or through concession, local piped gas services<sup>22</sup>.

[Law No. 9,427/1996](#), created the National Agency of Electric Power – ANEEL (Agência Nacional de Energia Elétrica) and established its main scope of actuation.

[Law No. 9,478/1997](#), known as the “Oil Law” established the end of Petrobras monopoly on oil research, exploration, production and refining. It also introduced the national energy policy, established the National Energy Policy Council and created the National Agency for Petroleum, Natural Gas and Biofuels.

[Law No. 9,648/1998](#), changed the Bidding Law, Concessions Law, ANEEL Law, and created the Wholesale Electricity Market (MAE - Mercado Atacadista de Energia Elétrica) - a free energy trading environment, and the National System Operator (ONS - Operador Nacional do Sistema). This Law also allowed for the restructuring of Eletrobras and the privatization of a small part of its generation assets.

[Law No. 10,438/2002](#), regulated the expansion of the emergency electric power supply, created the Proinfa, the Energy Development Account, and amended several laws as well.

[Law No. 10,847/2004](#), authorized the creation of the Energy Research Company (EPE).

[Law No. 10,848/2004](#), amended several laws and created the New Electric Industry Model. Several decrees regulate the Law, among which the most important is the one that covers the energy commercialization and the process for the grant of generation concessions<sup>23</sup>. It further created the Electricity Commercialization Chamber - CCEE.

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21 Until Constitutional Amendment No. 9 of 1995.

22 Constitutional Amendment No. 5 of 1995.

23 [Decree No. 5,163/2004](#).

[Law No. 11,909/2009](#), called the “Gas Law” provided on activities relating to natural gas transportation, as well as its treatment, processing, storage, liquefaction, regasification and trading. It was the first reform for boosting the natural gas industry in the country<sup>24</sup>.

[Law No. 12,273/2010](#), authorized the onerous transfer from the Federal Government to Petrobras of the right of exploration of six pre-salt fields up to the limit of extraction of 5 billion barrels.

[Law No. 12,304/2010](#), created Pré-Sal Petróleo (PPSA), state-owned company responsible for the commercialization of surplus oil, following CNPE’s guidelines and legal provisions.

[Law No. 12,351/2010](#), created the production-sharing regime for oil and natural gas bid-dings in the pre-salt polygon and strategic areas. Like the concession regime, it uses a different bid selection criterion for auctions (signature bonus in the concession case, and oil surplus in the sharing case), and it also differs in the way the Federal Government takes control of the results of large production fields.

[Law No. 12,783/2013](#), allowed for the early extension of generation and transmission concessions expiring after 2015, and the withdrawal of amortization.

[Law No. 13,365/2016](#), established the end of the mandatory participation of Petrobras as sole operator of the pre-salt fields, conferring greater flexibility to the state-owned company, and opening the possibility for other private agents to join the business.

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24 [Decree No. 7.382/2010](#).



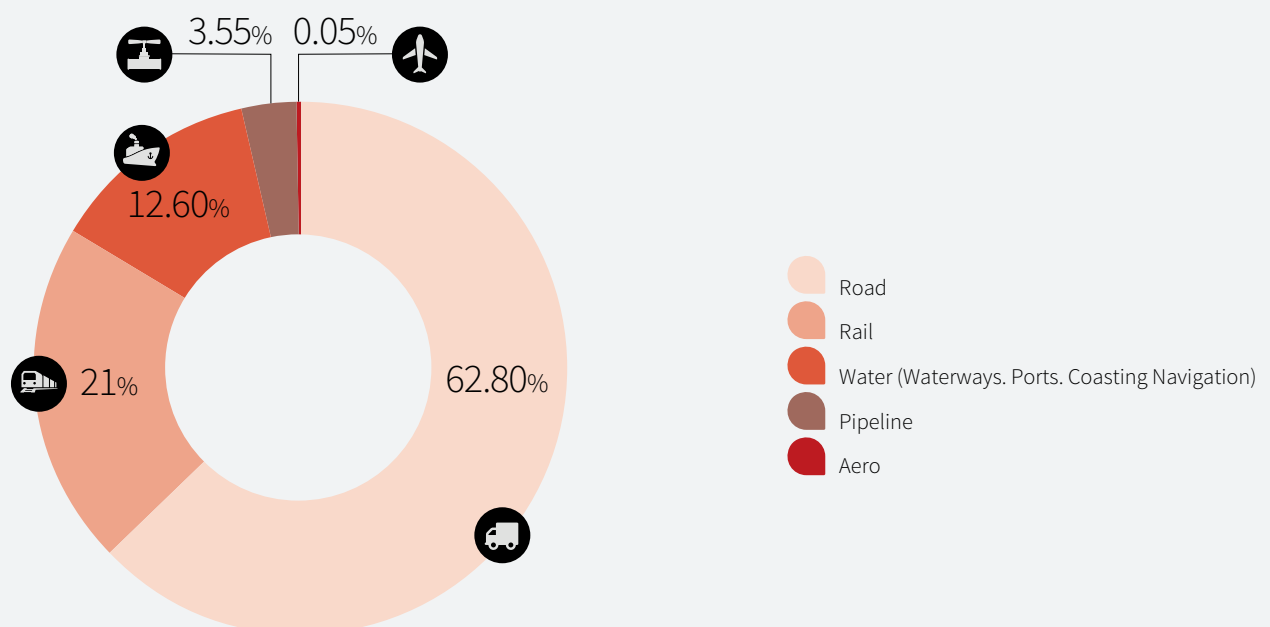
# 10. LOGISTICS AND TRANSPORTATION

Brazil is a continental size country, with a wide transportation infrastructure that comprises highways, railways, waterways, airports and ports, as well as other modals associated with logistics, such as dry ports (inland customs stations) and waterway terminals. Despite the variety, the supply is still considered limited in relation to the country's size, GDP and population.

Since 2015 the economic crisis has directly impacted the transportation sector, which received investments of only 0.5% of the GDP over the last years<sup>25</sup> - which corresponds to about one tenth of China's investments and half of Latin America countries<sup>26</sup>. The improvement of logistics infrastructure is an urgent challenge and represents a great opportunity for the country's economic recovery.

The Brazilian transportation mix presents an imbalance, due to the fact that the government provided fiscal incentives for the automotive industry during the industrialization years. Since then, the share of highways in transportation has increased, making the country dependent on the road modal.

**Cargo Transportation Mix (2016)**



Source: [Ilos Consulting, 2019](#)

25 Between 1993 and 2015.

26 [BNDES, 2017](#).

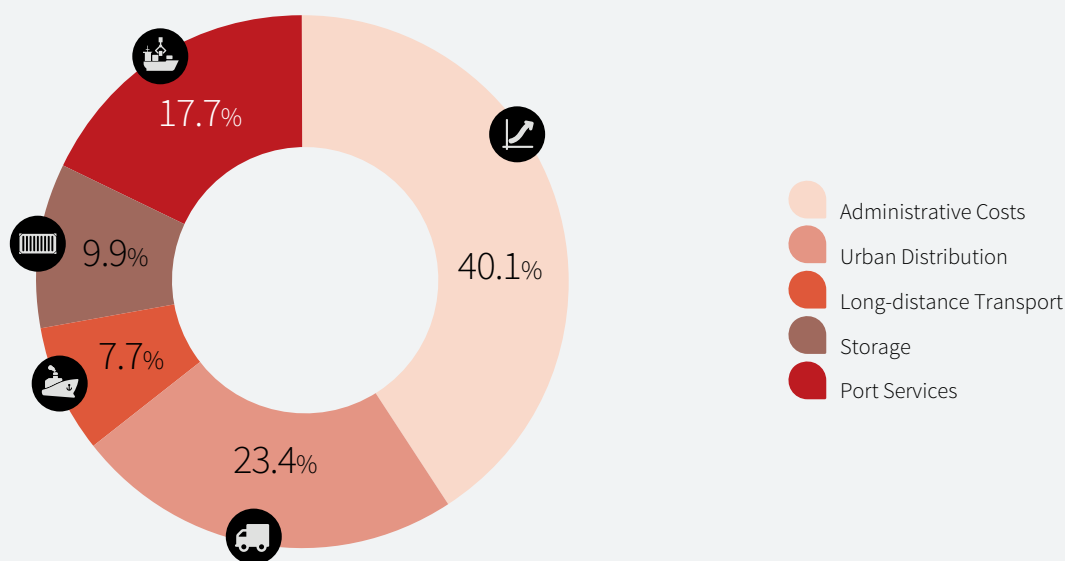
The major use of highways is inefficient, impacts on the value of the freight and the costs for the final consumers. As a consequence, Brazil reduces its competitiveness, given the long distances travelled by road.

To achieve a more balanced mix and more efficiency and competitiveness, it is imperative to invest in other kinds of modal, such as railways and waterways. Planning should also consider the integration between the systems, improving the multimodality and the inter-modality.

The lack of such integration makes Brazil rank as 56<sup>th</sup> in the [Logistics Performance Index](#)<sup>27</sup>, behind countries such as Chile (34<sup>th</sup>) and Mexico (51<sup>st</sup>), but ahead of Colombia (58<sup>th</sup>) and Argentina (61<sup>st</sup>) among the 160 countries covered.

The country's logistical cost represents about 13% of the companies' gross revenue - in China it is 10%, and in the United States 8.5%<sup>28</sup>. The biggest culprits are the absence of roadside support services, the lack of safety for cargo transportation, the movement restrictions for cargo vehicles and worker qualification.

### Logistics Costs of Companies, 2017



Source: Fundação Dom Cabral, 2018.

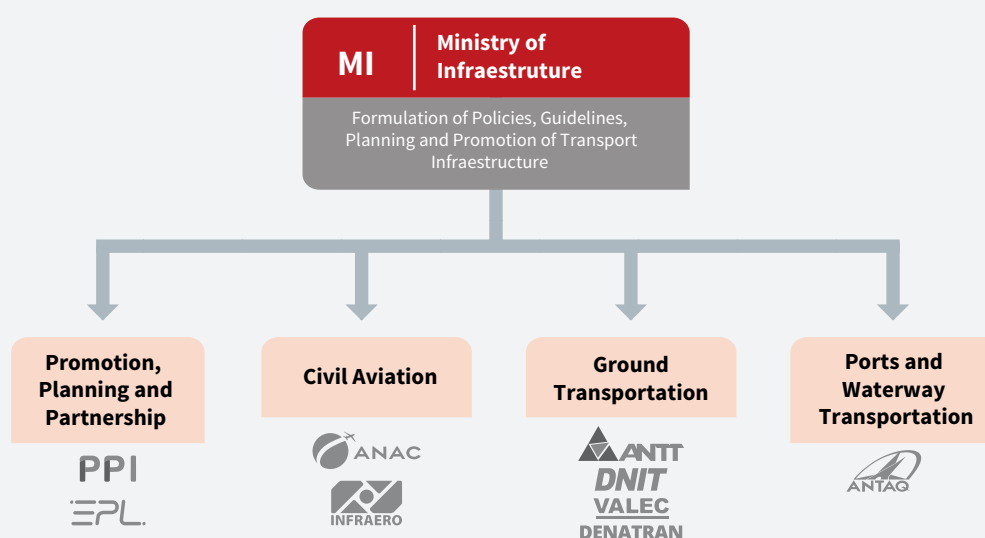
27 Logistics Performance Index (LPI), World Bank.

28 Fundação Dom Cabral (Logistics Costs in Brazil), 2017.

The Growth Acceleration Program (PAC) was created in 2007 to increase government investments in the infrastructure sector. In transportation, an average of R\$ 9.8 billion was invested per year between 2005 and 2018.

With the main objective of reducing the negative impact generated by the lack of investments in the sector, the federal government launched in 2016, the [Investment Partnership Program](#) (PPI), aimed at stimulating greater participation of the private sector through concessions and Public-Private Partnerships (PPP).

## 10.1. INSTITUTIONAL STRUCTURE



### [Ministry of Infrastructure](#) - MI

The Ministry of Infrastructure, a direct federal public administrative body, is responsible for formulating policies, guidelines and strategic planning for the development of transportation.

### [Investment Partnership Program](#) - PPI

PPI was created in 2016 with the purpose of promoting interaction between the State and the private sector, through partnership contracts and other privatization measures. The main objective is to increase transparency, competitiveness and governance over a portfolio of strategic infrastructure projects.

### [Planning and Logistics Company](#) - EPL

EPL is a public company created in 2012. It aims to improve the structure and quality of the logistics planning process, connecting roads, railways, ports, airports, and waterways.

#### [National Aviation Agency](#) - Anac

Anac, created in 2005, is a federal authority. It is responsible for regulating and supervising the activities of the aviation sector, airports and Air Force infrastructure, ensuring equipment and services in accordance with international quality standards.

#### [Brazilian Airport Infrastructure Company](#) - Infraero

Infraero, created in 1973, is a federal public company, responsible for the administration of airports. It currently participates in a consortium with the private sector and have exclusive controls of several airports, such as Santos Dumont (RJ) and Congonhas (SP).

#### [National Land Transport Agency](#)- ANTT

ANTT is a federal authority, responsible for road and rail regulation and concessions.

#### [National Department of Transport Infrastructure](#) - DNIT

DNIT is a federal authority created in 2002, to perform functions related to the construction, maintenance and operation of road, rail and waterway infrastructures under direct administration of the Union.

#### [Valec](#)

VALEC is a public company, in the form of a joint stock company. The company aims to build and operate the railway infrastructure.

#### [National Transit Department](#) - Denatran

Denatran is the executive organ of the National Traffic System, with administrative and technical autonomy and jurisdiction over the entire Brazilian territory.

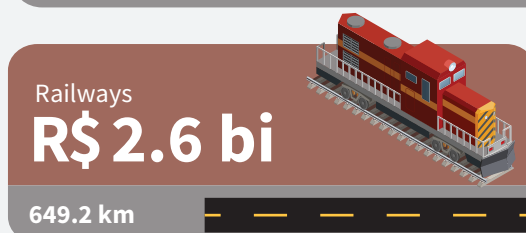
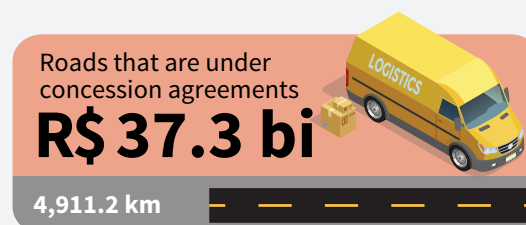
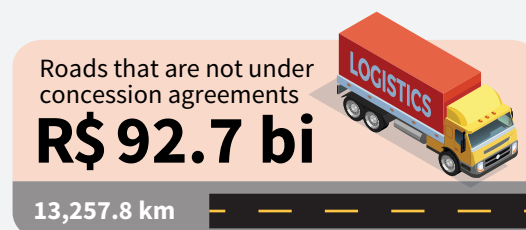
#### [National Waterway Transport Agency](#) - Antaq

Antaq is a special federal indirect autarchy, with functional and financial management autonomy. Its responsible for regulating and supervising waterway transportation activities and exploring waterways and ports infrastructure.



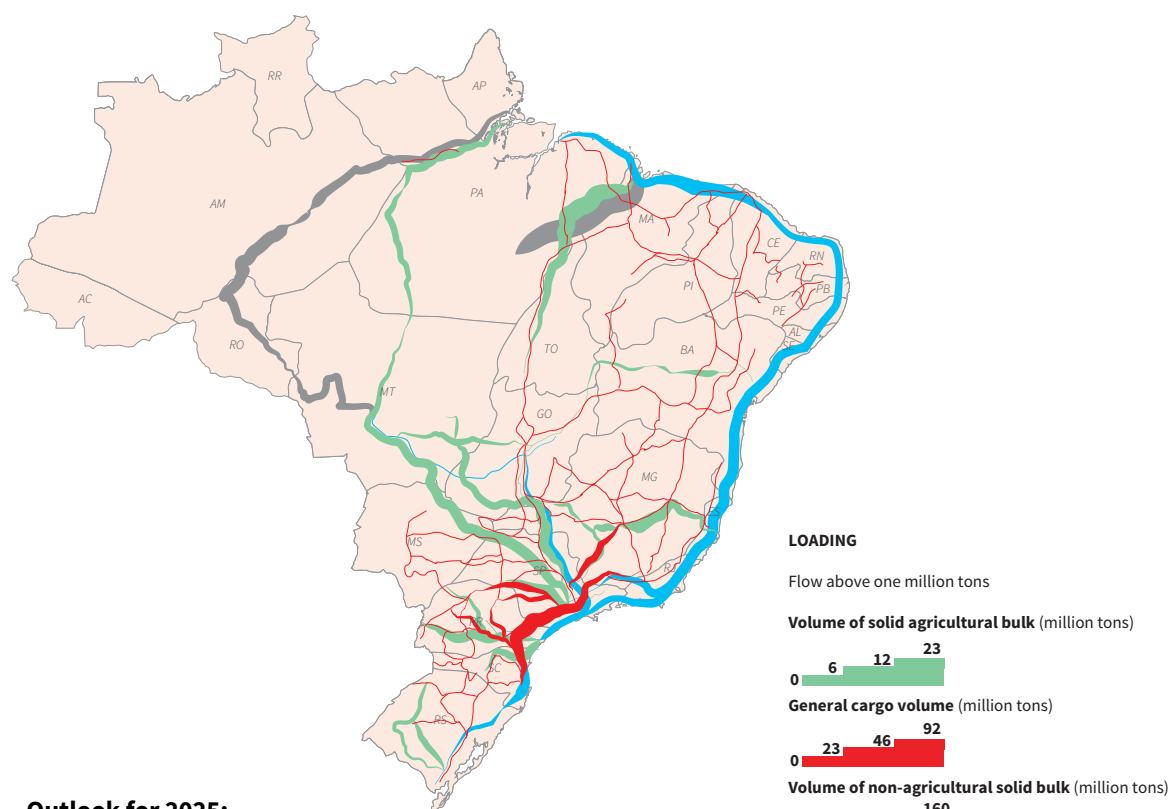
## 10.2. PLANNING

The [National Logistics Plan](#) (PNL) was developed by EPL and aims to identify and suggest solutions for the efficiency of cargo transportation and the proper integration between the modals.

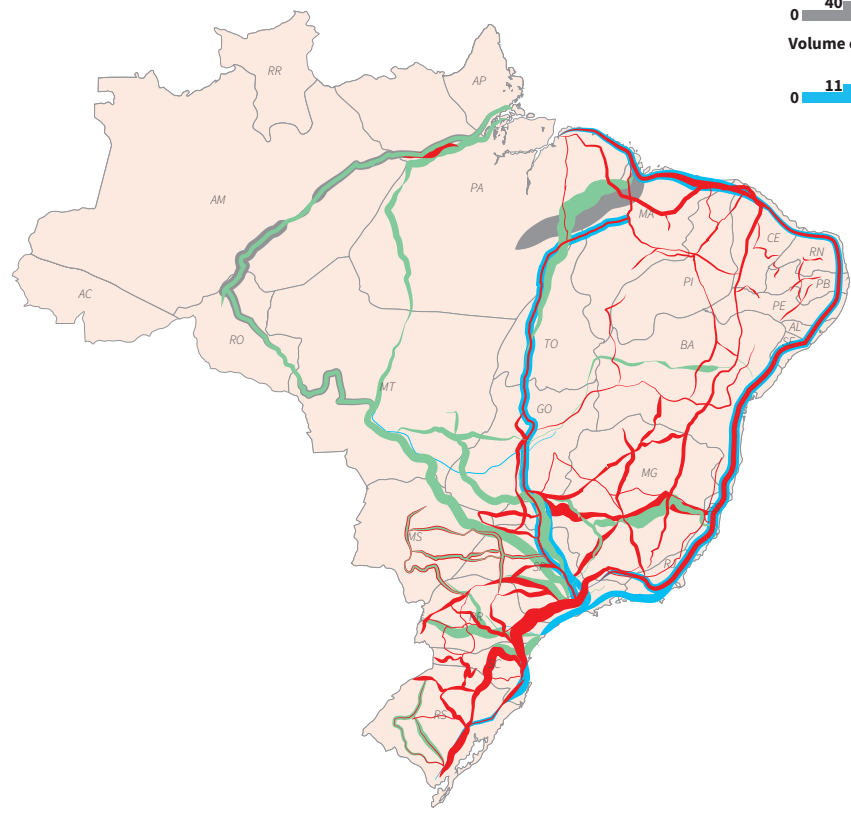


To improve the logistics performance, PNL foresees investments of R\$ 132.6 billion between 2015 and 2025. The plan covers the paving and duplication of more than 17,000 km of highways and more than 600 km of railroads. As a result of these investments, the country will move from the current transportation scenario to a broader and more complete system.

Logistics Network in 2015:



Outlook for 2025:

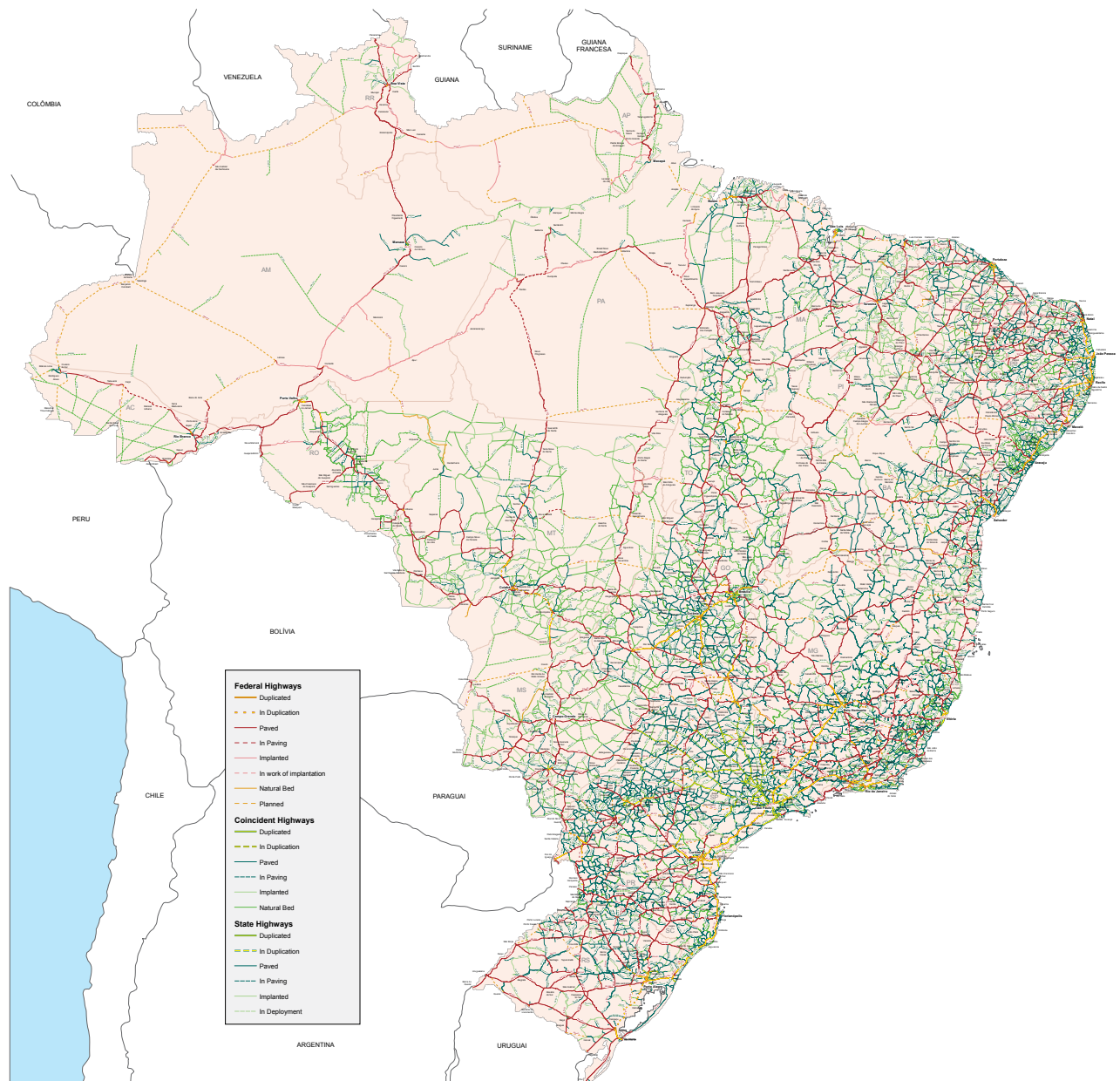


Source: [EPL](#), 2017.

## 10.3. ROADS

Brazil's road network is 1 million and 563 thousand kilometers long - 93% are state and municipal, and 7% federal (76.5 thousand kilometers). The importance of this modal is due to its capillarity to access small cities and also to the “last mile”<sup>29</sup>.

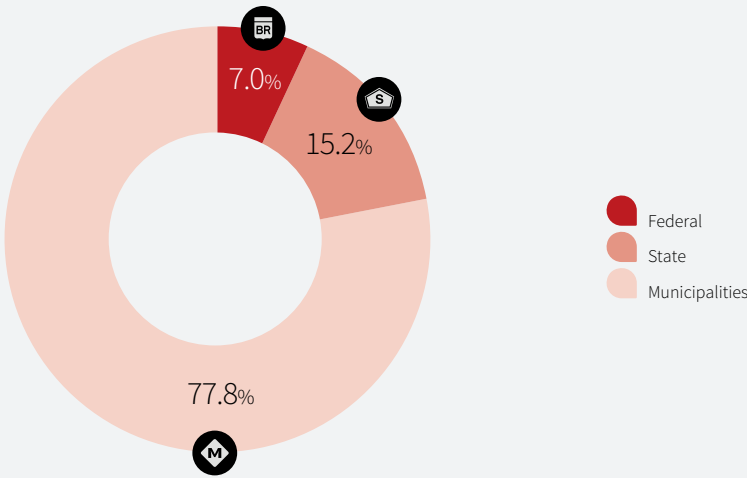
### Road Map



Source: [Ministry of Infrastructure](#)

29 Last mile is the last stage of transportation before the product reaches the consumer, that is, the moment when the goods leave a distribution center and reach their final destination.

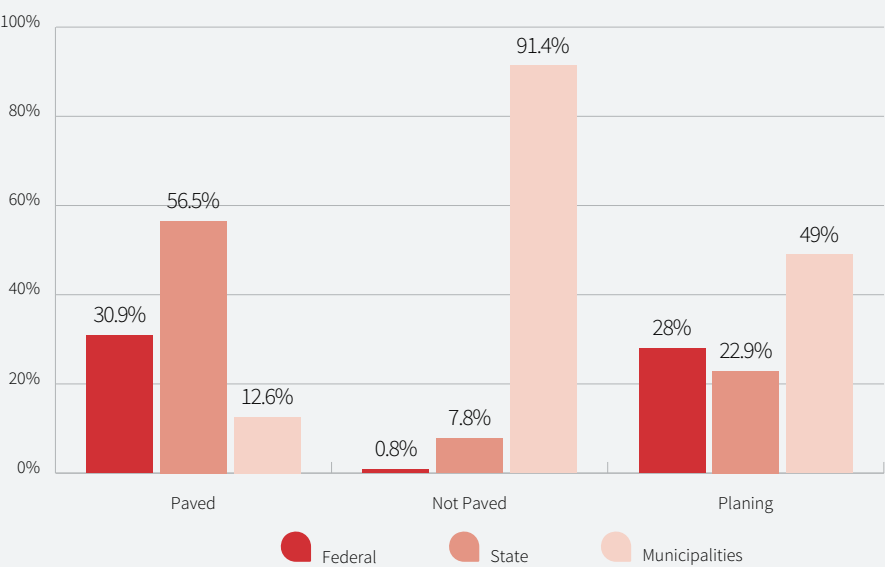
Responsibility over the Highways



Source: [CNT Yearbook of Transport, 2018](#)

**ALTHOUGH ROADS ARE THE MAIN MEANS OF MOVING CARGOS AND PEOPLE, ONLY A SMALL PART OF THEM, 14%, IS PAVED<sup>30</sup> (213,000 KM).**

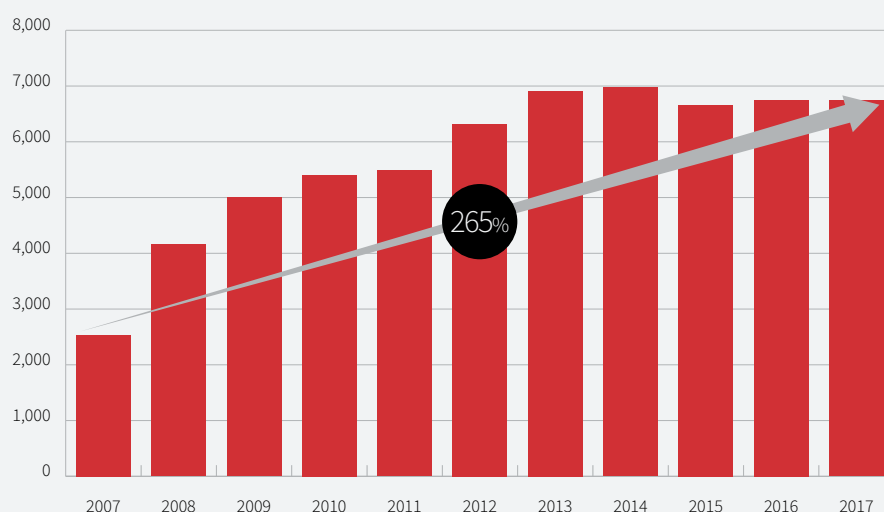
Paved and in planning roads (2018)



Source: CNT Yearbook of Transport, 2018

To reduce the unpaved percentage, some federal and state highways have been granted to the private sector. There are currently 19,678 km under private control, which account for 9.24% of paved roads.

### Investments in Concessioned Highways (R\$ million)



Source: [ABCR, Annual Report 2017](#)

For the next few years, the Government launched an agenda of federal and state highway concessions, with toll tariff as a counterpart for duplication, paving, signaling renewal, construction, among other services.

Technological advances are redefining the market, optimizing processes and making transportation more efficient and intelligent. The greater connectivity in the industry is a trend and allows tracking all stages of transportation and the exact positioning of a truck. Operational control, data analysis, vehicle monitoring, route preparation and vehicle tracking are observed opportunities that increase productivity.

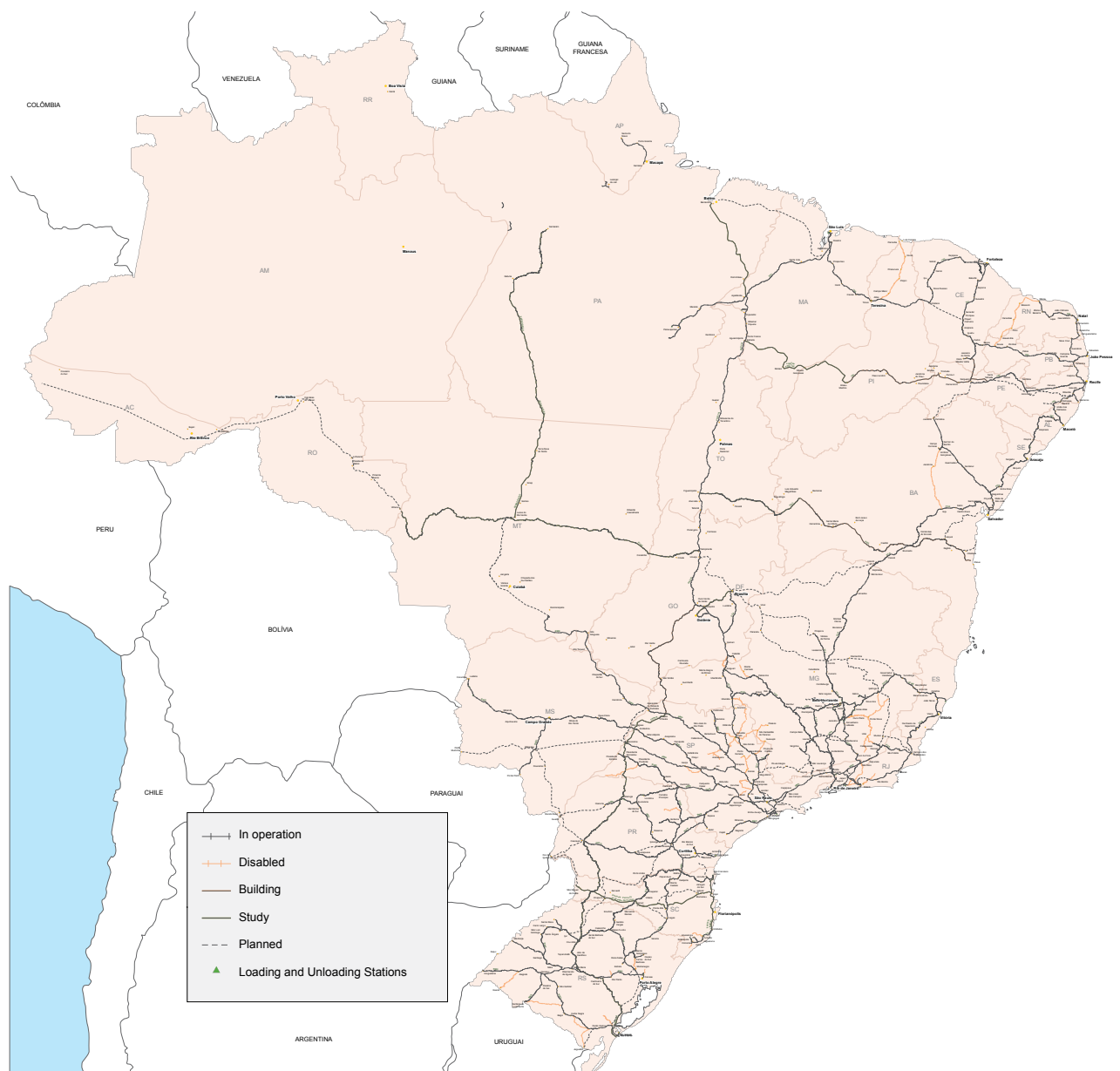
Autonomous vehicles are another example with potential and pilot experiences around the world. The great expectation is the application in commercial scale, with trucks monitored at a distance.

## 10.4. RAILWAYS

Railroad cargo transport occupies the second position, representing only 21% of the Brazilian matrix - very far behind highways with 63%. In other continental size countries, this modal answers for, on average, 48% of the matrix.

Brazil has the ninth largest railway network in the world - 29,817 km. However, performance indicators such as productivity (ton/km) and network density (km/km<sup>2</sup>) are also much lower than in developed countries. Brazilian density is 3.35 km/km<sup>2</sup>, while the United States is 22.87 km/km<sup>2</sup>, and Germany is 117.59 km/km<sup>2</sup>.

### Railways Map



Source: [Ministry of Transport](#)

Since the 90s, the Brazilian government granted the entire federal railway network.

### Railroad Network Concessions

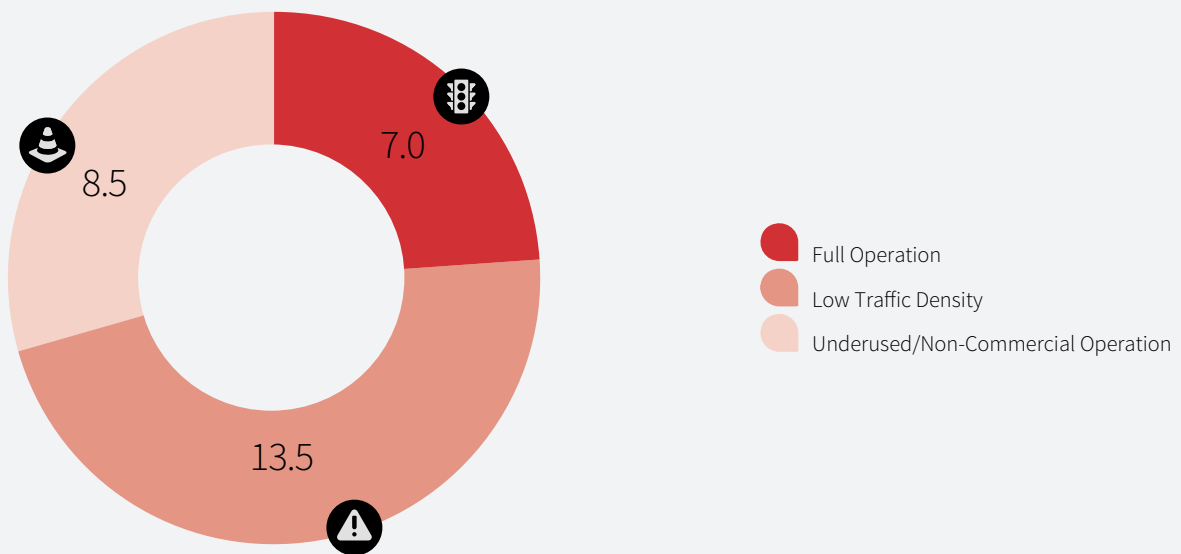
Railway	Concessionaire	Extension (km)
Estrada de Ferro Carajás (EFC)	VLI	978
Estrada de Ferro Vitória Minas (EVM)	VLI	895
Estrada de Ferro Paraná Oeste	Ferroeste	248
Ferrovias Centro Atlântica	FCA	7,223
Ferrovias Norte Sul-Tramo Norte	VLI	745
Ferrovias Norte Sul-Tramo Central	Rumo	856
Ferrovias Teresa Cristina	FTC	163
Ferrovias Transnordestina	FTL	4,295
Sudeste	MRS	1,686
Malha Norte	Rumo	735
Malha Oeste	Rumo	1,973
Malha Paulista	Rumo	2,055
Malha Sul	Rumo	7,223
<b>Total</b>		<b>29,075</b>

Source: ANTT, 2019

Even after the concessions, the rail network is considered small in relation to the country's territory. A significant number of lines are operating at low density and about a quarter at full capacity. Part of the concession lines that are underused (8.5%) could be operated as short lines<sup>31</sup>.

31 Short lines are railroads that operate secondary branches, promote the development of local industry, create new businesses in the region and revitalize the environment, among other benefits.

**Railroad Density (thousand km)**



Source: [Executive Report of the NLP, 2018.](#)

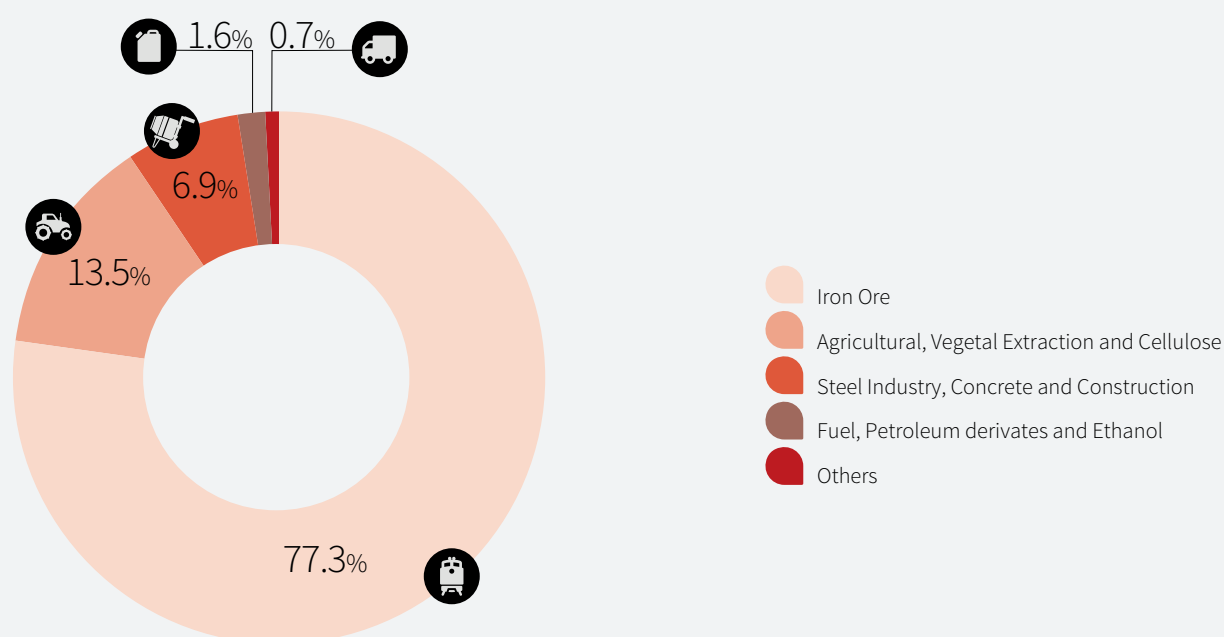
An integrated railway network is essential to transform the present model that excels in export corridors. There is a need for investments especially in the Northeast, North and Center-West, which could contribute to moving large volumes of cargo over long distances.

Railway exploitation in Brazil is based on a regional vertical monopoly, with low intermodal competition. The concessionaire is responsible for maintaining and increasing the capacity of the network. It is the only operator, having priority in accessing the market served by the network granted.

The main railroad cargos are agricultural and mining commodities. Iron ore accounted for more than 77% of the cargo, concentrated on Vale’s railroads concessions: Vitória Minas Railroad (EFMV) and Carajás Railroad (EFC).



## Types of cargo (2017)



Source: Logistic Bulletin 2017 / ANTT, 2018

Public investments were concentrated in brown field railroads, such as in the Railway West-East (called FIOL), which received about R\$ 333 million in the Northeast region and, in the Railway North-South (called FSN) with around R\$ 170 million invested in the Center-West region<sup>32</sup>.

Private investments reached R\$ 5.4 billion in 2017. The amount was allocated to increase rail capacity, mainly in duplications and extensions. Other investments were in operational items such as urban passages, facilities, control and signaling equipment, among others<sup>33</sup>.

Even with the crisis of recent years, private sector investments have been directed to the Carajás Railway (EFC) and to the Vitória Minas Railway (EFVM), both operated by Vale. Rumo recently won the concession to operate FNS-Central Section, with the amount of R\$ 2.72 billion. According to the [Government's Plan](#), the next few years foresee several railway concessions.

The increased use of the railway has positive effects both in the operation costs and in the GHGs emissions.

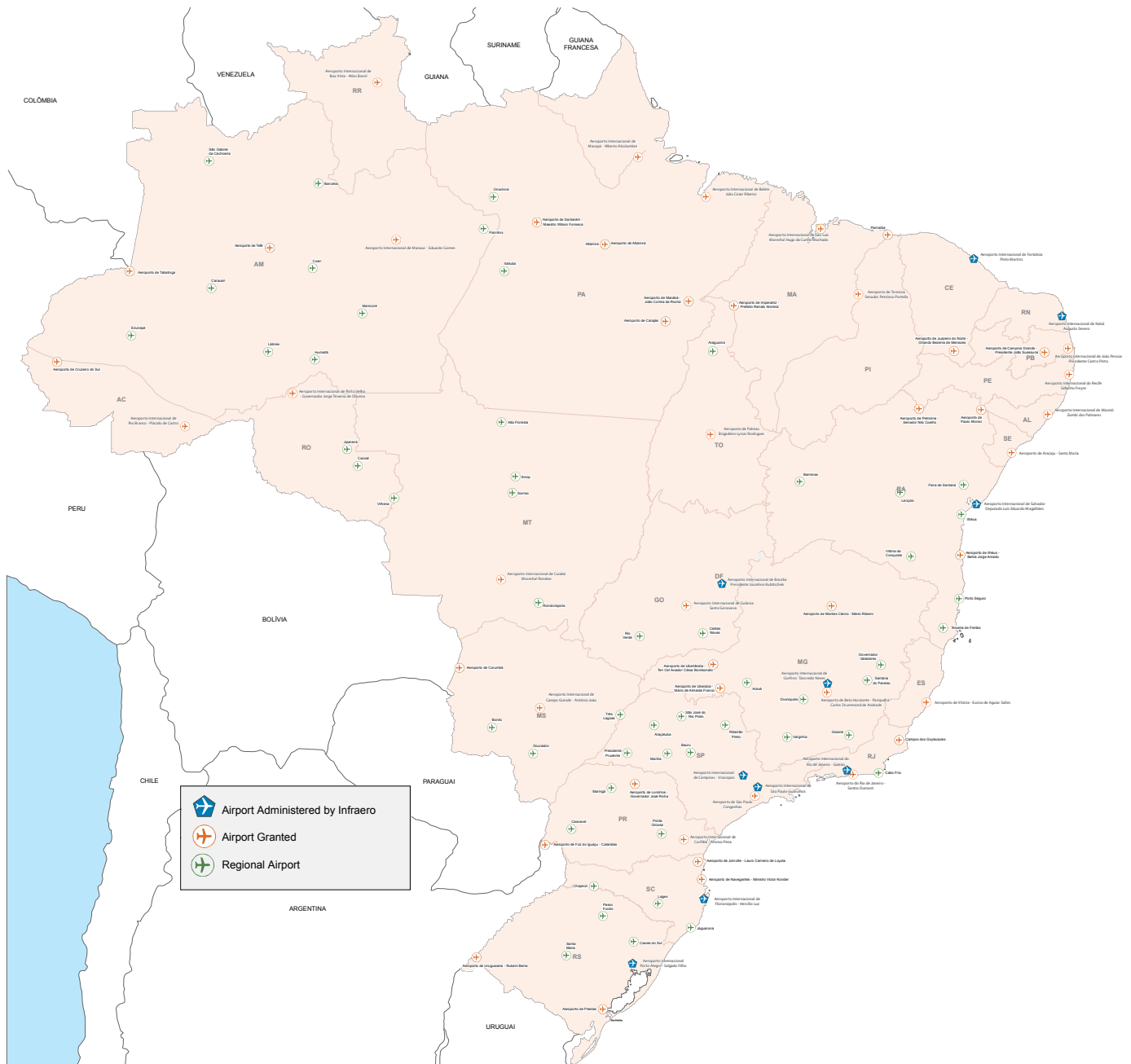
32 ONTL, 2017.

33 ONTL, 2017.

## 10.5. AIRPORTS

The Brazilian aviation sector operates competitively, with free prices. Currently, any company certified by ANAC can provide flights, obeying the airport's infrastructure capacity and the quality of the services provided.

### Airports map

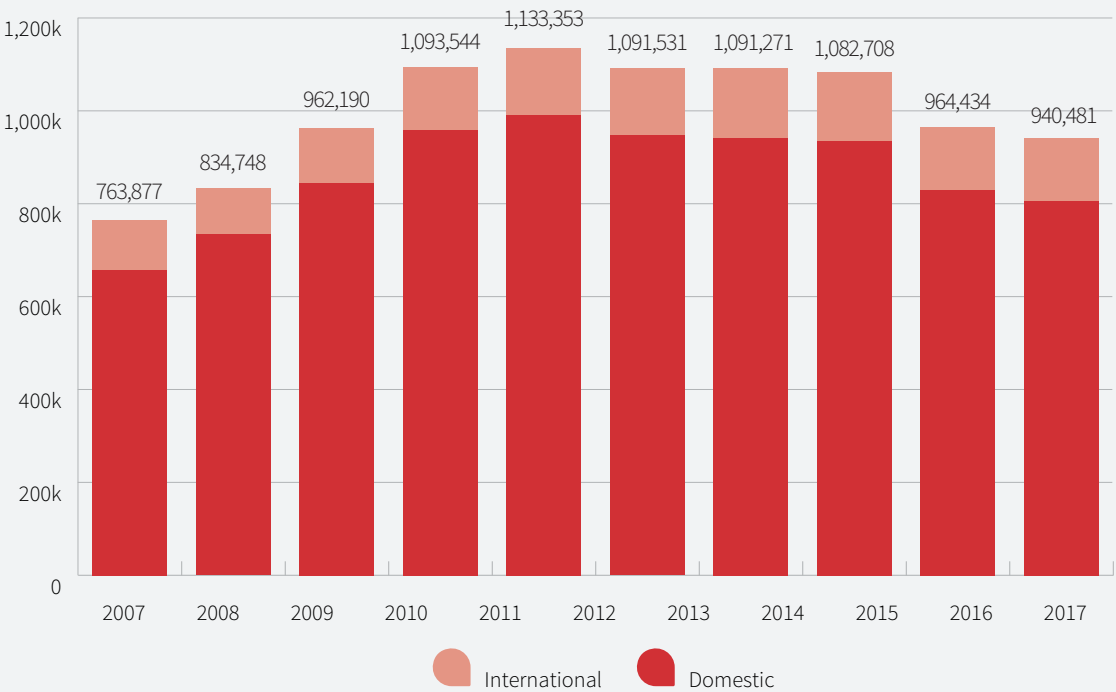


Source: [Ministry of Infrastructure](#)

Over the last years<sup>34</sup>, the demand for domestic and international flights increased by 85%, which represents about 49 million more passengers and an average growth of 7% per year. Considering only domestic flights, the increase was 60%.

The Brazilian domestic market shows a great growth potential. Over the last decade, the share of air transportation went from 44% to 67.5%, while the roadway share decreased from 56% to 32.5%.

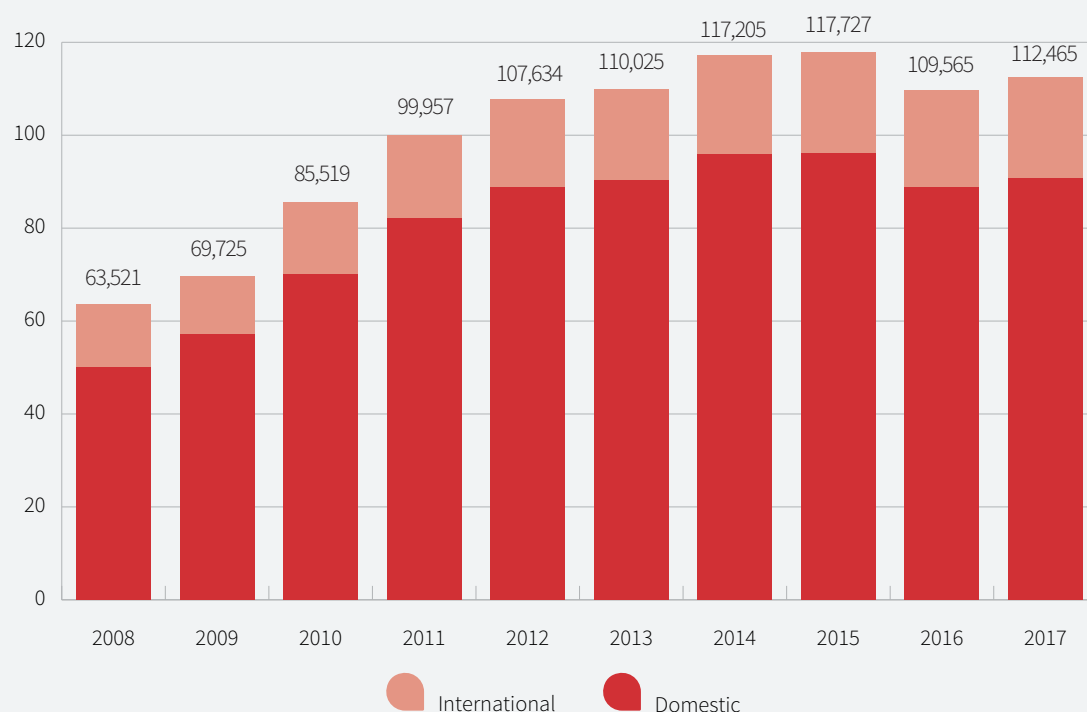
**Number of flights**



Source: Air Transport Yearbook, 2017

34 2008 to 2017.

## Number of passengers (thousand)



Source: Air Transport Yearbook, 2017

In terms of cargo, around 426 thousand tons were moved by domestic flights, an increase of 1.2% in the last years<sup>35</sup>. International flights, on the other hand, handled around 821 thousand tons and showed a significant growth of 38.4% over the same period.

Since 2011, the air sector has undergone a structural transformation, with the grant of airport operations to the private sector. The first concession was the Airport of São Gonçalo de Amaranante, in the Northeast region (Natal - RN). In the following year, auctions were held at the airports of Guarulhos (SP), Viracopos (SP) and Brasília (DF) and, in 2013, the airports of Confins (MG) and Galeão (RJ) were awarded. In all of these grants, Infraero has a 49% stake.

In 2017, the airports of Fortaleza (CE), Salvador (BA), Florianópolis (SC) and Porto Alegre (RS) was carried out. At the beginning of 2019, another 12 airports, 6 in the Northeast, 2 in the Southeast and 4 in the Midwest were the object of concessions. For these airports the Federal Government has chosen to exclude Infraero's participation. The planned investments include the expansion of passenger terminals, aircraft yards and landings and take-off runways.

35 2008 to 2017.

So far, 8 international operators are in Brazil: the Swiss group Zurich Airport (Florianópolis, Confins, Vitória and Macaé); the German Fraport (Fortaleza and Porto Alegre); the Frenchs Egis (Viracopos) and Vinci Airports (Salvador); the Argentine Corporación América (Brasília and São Gonçalo do Amarante); Changi Airports, from Singapore (Galeão, in Rio); the Airport Company South Africa (Guarulhos) and the Spanish Aena Desarrollo (Northeast block).

There are still 44 airports under Infraero's control and all of them are expected to be granted. Investments around R\$ 8.8 billion are expected in 30 years of concession<sup>36</sup>. In parallel, Infraero's stake in the six airports of the first round of the concession will be sold. In this way, all federal airports will be transferred to the private sector. Air navigation will be assigned to the state company NAV Brasil, with the main function of managing the control towers.

There are also investment opportunities at regional airports. In 2017, 5 airports in the State of São Paulo were conceded. It was organized in a single block, with the goal of increasing the economic and financial viability. The winning consortium took all 5 airports - there is no public stake in the auction. The São Paulo government plans to grant the remaining 20 airports by 2020.

## 10.6. PORTS

The Brazilian coast has 8,500 km of navigable extension. The Brazilian port sector handled more than 1 billion tons of goods, with a 33% growth in the last seven years. Annually, the movement of the ports corresponds to more than 80% of the country's exports<sup>37</sup>. However, it's fundamental to improve port infrastructures to achieve efficiency and competitiveness.

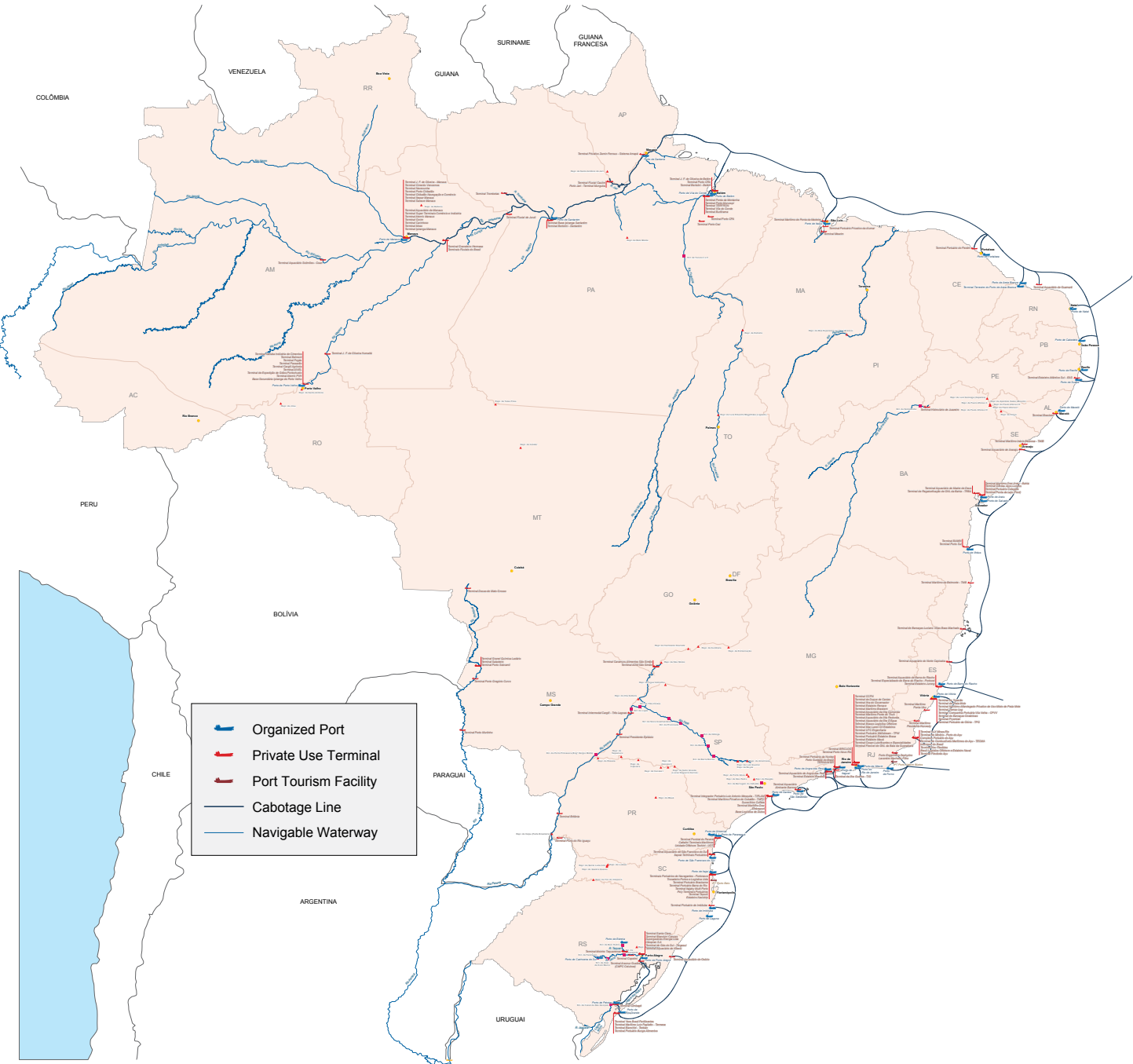
The Brazilian port system comprises 34 public ports - 18 are delegated, granted or state and municipal authorized. Other 16 ports are managed directly by the Docas Companies – joint stock companies with the Federal Government as the major shareholder.

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36 PPI.

37 Period 2010 - 2017, ANTAQ.

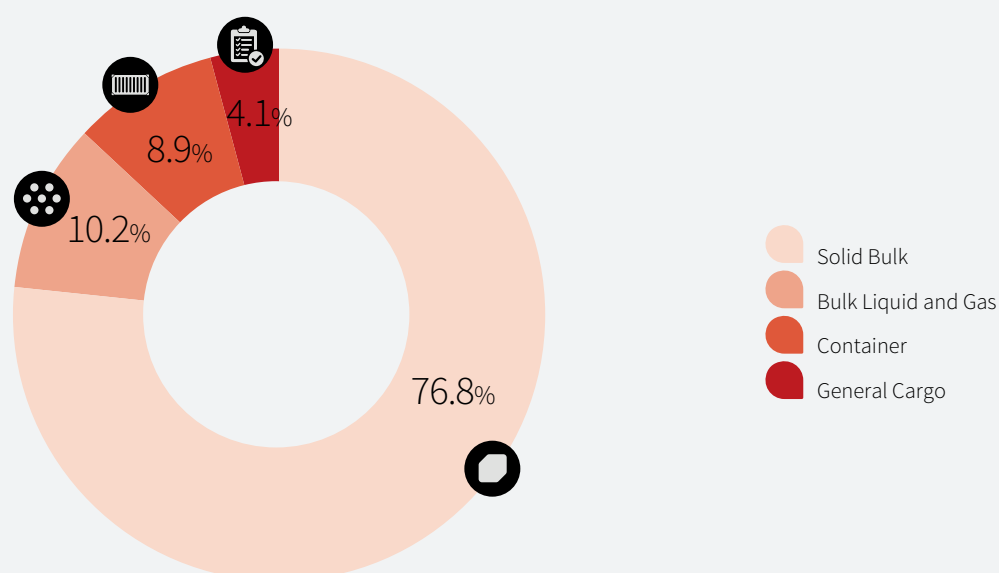
# Ports Map



Source: [Ministry of Infrastructure](#)

The handling of public ports and private terminals grew 2.7% in relation to the previous year, totaling 1.117 billion tons in the last year. Long-distance shipping grew by 32% in the last decade and handled 824 million tons in the last year - 82% of which were destined for export.

### Handling in long-distance navigation

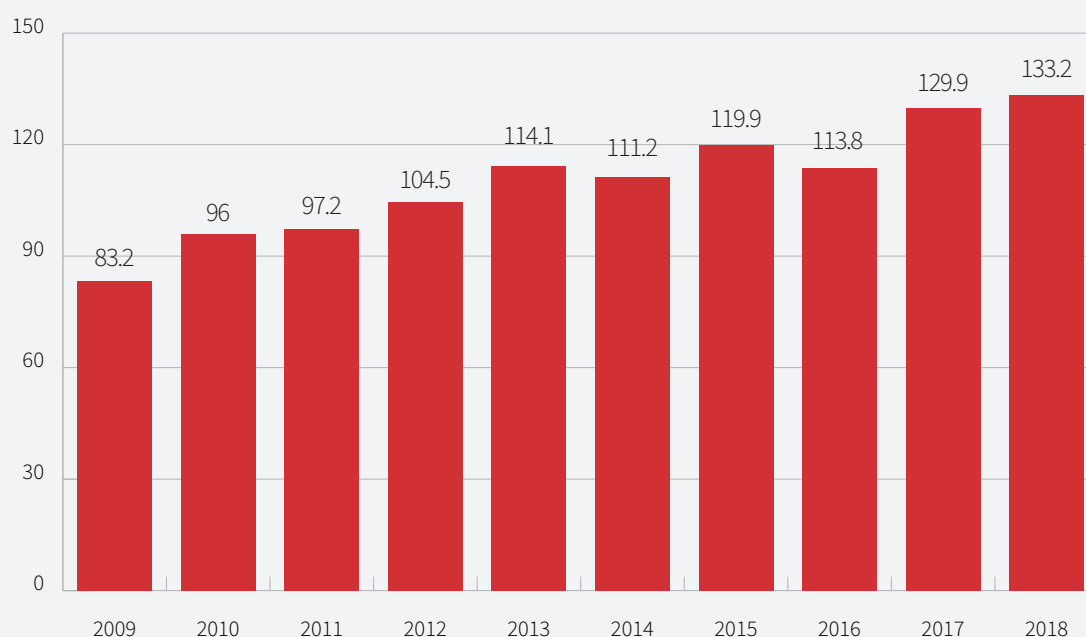


Source: [ANTAQ, Statistical Yearbook 2018](#)

The main Brazilian public port is the Port of Santos, the largest in Latin America, responsible for 30% of the country's exports and imports. The port is located 70 km from the Metropolitan Region of São Paulo.

It already manages more than 133 millions tons, with 60% growth over the last 8 years. The movement of containers last year reached 2.6 million units, a record for the Port.

## Cargo Traffic in Port of Santos



Source: [Port Statistics of Santos, 2018](#)

The Port of Itaguaí (RJ), with 56.6 million tons and the Port of Paranaguá (PR), with 48.5 million tons, occupy second and third place in movements between public ports.

The private sector represents a large part of the investments, being responsible for the maintenance and operation of more than 30 port terminals, such as the Ponta da Madeira Terminal (MA) - 198 million tons, and the Tubarão Terminal (SC) - 104 million tons handled last year<sup>38</sup>.

The port sector presents numerous investment opportunities for the next 20 years. The resources foreseen for new constructions, installations, expansions, modernizations, repairs and acquisition and maintenance of equipment are about R\$ 51 billion, shared into public and private investments<sup>39</sup>. The PPI presents an amount of information on the next terminals and port areas to be granted to the private sector.

38 Ministry of Infrastructure.

39 PNL, 2015. The forecast is 92% growth in demand for seaport services, between 2015 and 2042.



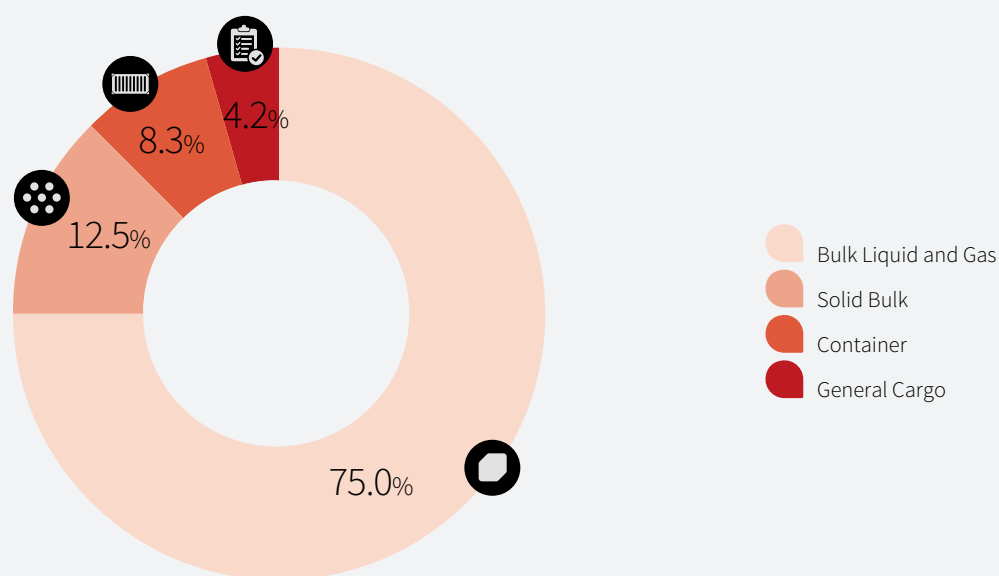
## 10.7. CABOTAGE

Cabotage navigation is considered strategic and receives subsidies and market reserves all over the world. In Brazil it is carried out exclusively by Brazilian companies<sup>40</sup> and between Brazilian ports, bordering the coast. The trend is towards greater use of this modal in the coming years.

Cabotage represents approximately 22% of the interregional cargo movement, with a growth rate of 4% in relation to the previous year<sup>41</sup>.

The main cargoes transported via cabotage are fuels between refineries and production zones, ores from production zones to export terminals, grains on the South-Northeast route and containers on the Amazonas-São Paulo route. Last year, the largest cargo was liquid and gaseous bulk - 173 million tons.

### Types of Cargo in Cabotage Navigation



Source: [ANTAQ, Statistical Yearbook 2018](#).

With the resumption of economic growth, new centers of consumption and production will make the scenario even more promising. The lower unit cost, reduction of breakdowns, decline of accidents and road thefts, lower fuel consumption and, consequently, the diminution of CO<sub>2</sub> emissions are attractive points for the investor in the coming years.

40 Or foreign vessel chartered by Brazilian companies and authorized by ANTAQ.

41 [ANATQ - Statistical Yearbook 2018](#)

## 10.8. WATERWAYS

In addition to its extensive maritime coast, Brazil has 27.5 thousand km of waterways and navigable rivers<sup>42</sup>. The potential of this modal is not yet explored, representing only 13% of the mix.

The country has 12 hydrographic basins, 5 of which are capable of transporting cargo. In the last year, more than 101 million tons were handled, with 20% growth compared to the previous year<sup>43</sup>.

## Waterways Map



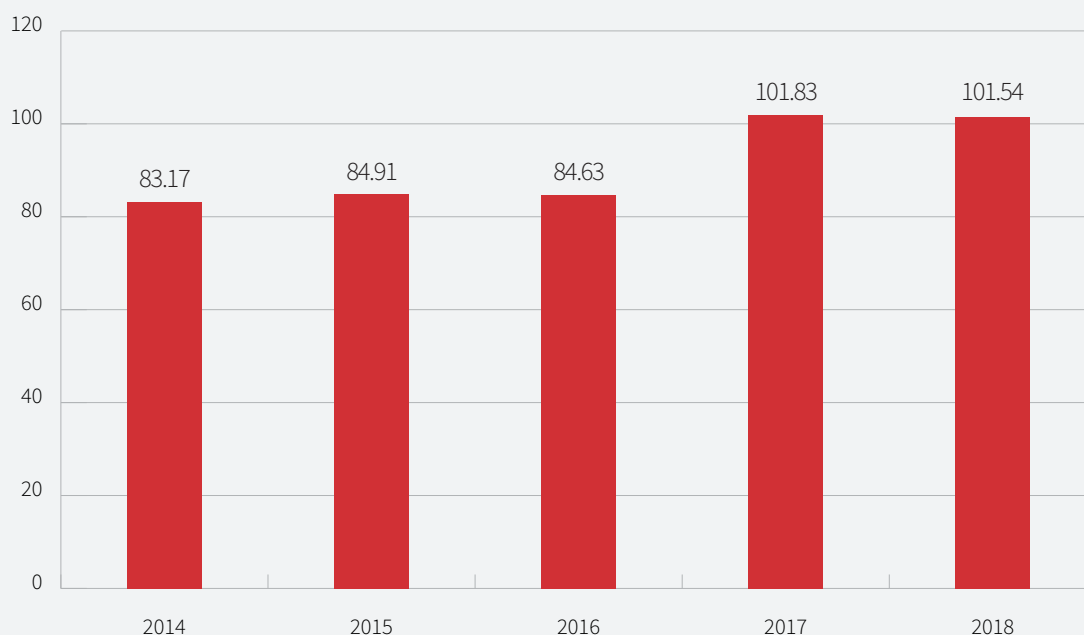
Source: [Ministry of Infrastructure](#)

42 Waterways have structures such as signaling, safety equipment, which differs from navigable rivers.

43 [ANTAQ - Statistical Yearbook 2018.](#)

In relation to the volume of cargo, inland navigation was the one that presented the highest growth rate (22%) in the period from 2014 to 2018, and it was responsible for the loading and unloading of more than 100 million tons in the last year.

### **Cargo Traffic in Waterways (in millions of tons)**



Source: ANTAQ, Statistical Yearbook 2018

The investment opportunities in waterways are mainly focused on the maintenance and structuring, such as construction of terminals and improvements in navigation channels. In addition, resources for the implementation and upgrading of signage, fleet, dredging and new projects.

## **10.9. PIPELINES**

An important, albeit little exploited element, pipelines represent only 3.55% of the Brazilian matrix, with a great potential for growth. By comparison, in the United States, the modal occupies about 15%.

## Pipelines Map

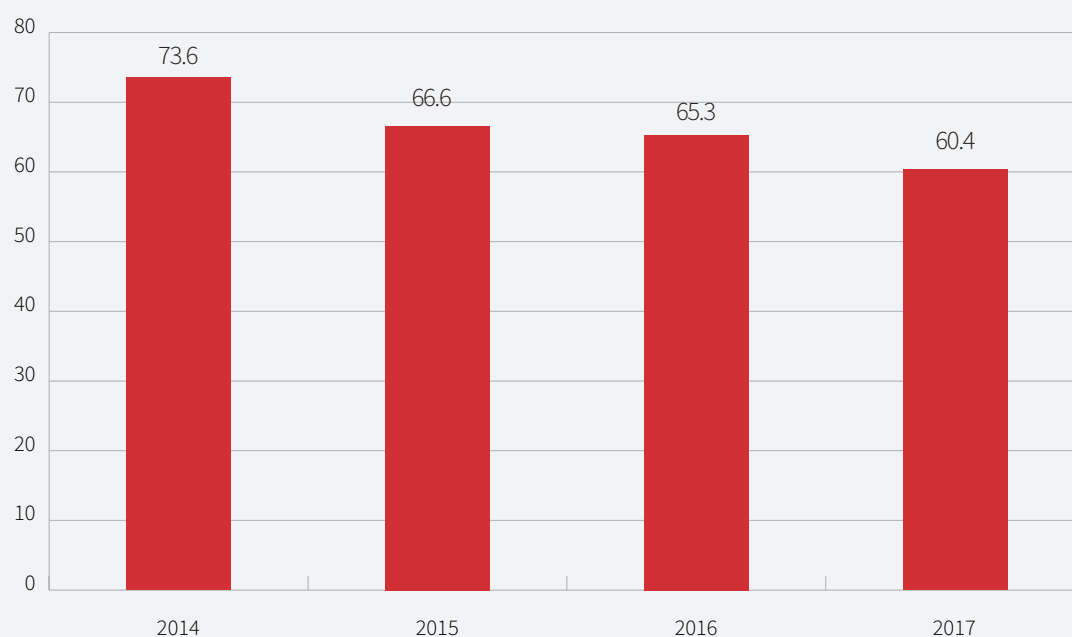


Source: [Ministry of Infrastructure](#)

The loads are mainly fuels and ores. The main participation is from the state of São Paulo, with about 82% of the total. Pipelines are considered an advantageous and safer way to move large volumes of cargo, especially when compared to highways or railways<sup>44</sup>.

In 2017, the country moved 60.4 million m<sup>3</sup> of fuel. Compared to 2014, there was a drop of almost 18% in the volume, with the most significant registered in 2017. That can be explained by the demand for fuel and the high prices charged to the final consumers <sup>45</sup>.

#### Fuel Handling (million m<sup>3</sup> at 20°C)



Source: [Transpetro, EPL - Logistics Bulletin 2017](#)

## 10.10. MULTIMODALITY

Multimodality, as well as inter-modality, offers cost reduction and competitiveness through the efficient combination of two or more kinds of modal<sup>46</sup>.

The Multimodal Transport Operator - OTM, is exclusively responsible for the transportation, customs control and taxes<sup>47</sup>, from picking up the cargo to its final destination, covered by a single insurance policy.

In addition, OTM is responsible for the Multimodal Freight Bill of Lading. This mandatory document describes the characteristics and data of the cargo, origin-destination, the value of the services, among others.

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<sup>45</sup> [ONLT, 2017.](#)

<sup>46</sup> Multimodality is governed by a single contract and differs from inter-modality with two or more contracts.

<sup>47</sup> Act 9.611/98

## OTMs in Brazil

Brazilian Companies	Foreign Companies	Total
493	6	499

Source: [ANTT, 2016](#)

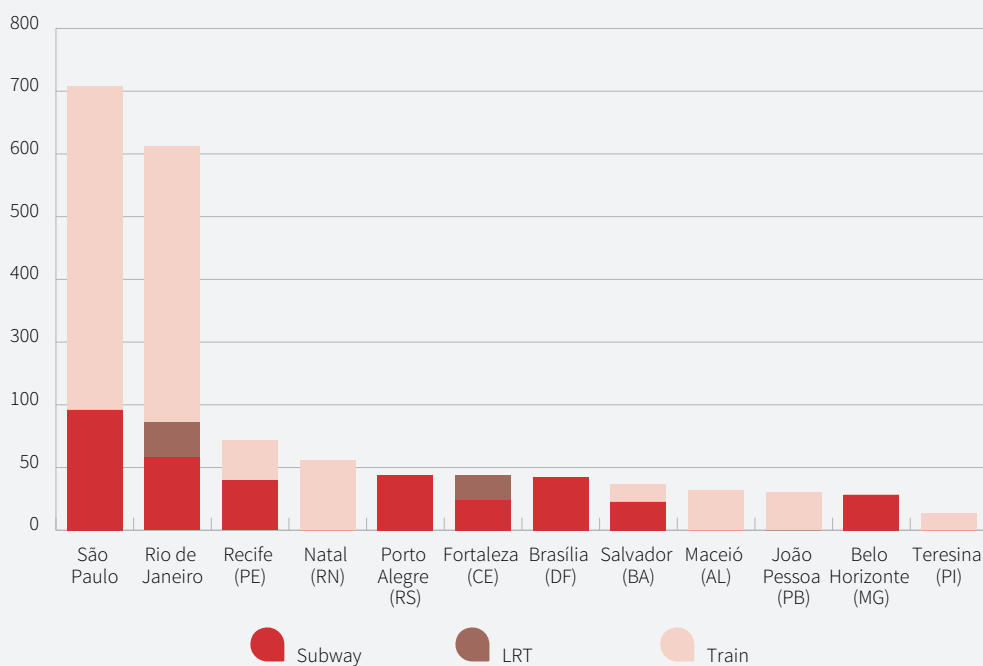
Brazil has huge potential for developing multimodality, due to the need of real integration of all modals. It is necessary to connect the whole country not only through its infrastructure but also through software development in order to achieve bureaucratic reductions and increased efficiency in the exchange of information.

## 10.11. URBAN MOBILITY

Urban mobility in Brazilian cities is mainly through roads or highways. Investments are fundamental to reduce the lack of quality infrastructure supply for the population's daily transportation.

Only 12 Brazilian cities use rail systems for passenger movement. Just 8 cities have subway infrastructure.

### rails extension used for urban mobility (in km)



Source: [Mobilize, 2017](#), [São Paulo Subway, 2018](#)

The city of São Paulo has the largest extension of subway lines with 96 km (7.8 km of mono-rail) and 5 lines. However, it's behind Buenos Aires - 1/3 of the inhabitants of São Paulo - in number of stations and to Mexico City - which started the construction of the subway in 1968, together with São Paulo and already has almost 300 km in extension.

For the most part, states and municipalities hold responsibility for the urban mobility. However, the Ministry of Regional Development (MDR) performs the merger of information, as well as part of the financing and structuring of projects.

In 2019, the MDR launched a portfolio of projects that includes 21 municipalities and investments around R\$ 119 million <sup>48</sup> by 2022. The opportunities are to expand the medium and high capacity transportation supply, paving of urban roads, shelters for public transportation users, accessibility, bicycle paths and new studies and projects.

Broad and unrestricted digitalization is the only way to turn big cities into smart cities. The urban planning and development vision integrates multiple technologies and innovative solutions to manage assets and services not only in urban planning, but also in social housing, energy, mobility, waste collection and air pollution control.

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48 [Federal Portal, 2019](#)

## 10.12. LEGAL AND REGULATORY FRAMEWORK

[Act No. 5,862/1972](#) created the Brazilian company of Airport Infrastructure - Infraero.

[Act 8,031/1990](#) and [Act 9,491/1997](#) established the National Privatization Program, with the purpose of granting federal railroads to the private sector.

[Decree No 1,832/1996](#) regulated rail transportation.

[Act No. 9,432/1997](#) established guidelines for cabotage and shipbuilding.

[Act 9,611/1998](#) sets forth provisions on the multimodal transport of loads and creates and charges the OTM (Multimodal Transport Operator).

[Act No. 10,233/2001](#) regulated the restructuring of waterway and land transport, created the National Council for the Integration of Transport Policies, the National Land Transport Agency (ANTT), the National Waterway Transport Agency (ANTAQ) and the National Department of Transport Infrastructure (DNIT) among other arrangements.

[Act No. 11,442/2007](#) set forth provisions on the transportation of cargo on behalf of third parties and on the remuneration

[Act No. 11,182/2008](#) ([Decree No. 5,731/06](#)) created the National Civil Aviation Agency (ANAC).

[Act No. 12,379/2011](#) created the National Traffic System.

[Act No. 12,587/2012](#) established the National Policy on Urban Mobility (PNMU). Provided guidelines for the regulation of public transport services and for the planning and management of urban mobility systems.

[Act No. 12,815/2013](#) called the “New Act on Ports”, established goals and deadlines for the achievement of service levels, regulation of the tariffs, changes in the powers of the granting authority and other entities involved, change in the criteria for judging bids, among others.

[Act No. 13,081/2015](#) provided on the construction and operation of floodgates or other waterway crossing devices for levels on navigable and potentially navigable waterways.

[Act No. 13,103/2015](#) called the “new Law of Truckers”, regulated the maximum period to drive a truck, the rate of loading and unloading of loads, as well as the mandatory rest.

[Act No. 13,448/2017](#) established general guidelines for the extension and re-bidding of partnership agreements in the highway, railway and airport sectors.

[Act No. 13,804/2019](#) set forth provisions on the changes in the Brazilian Traffic Code (Act No 9,503/1997), on measures to prevent and suppress smuggling, embezzlement, theft, robbery and reception in road cargo transport.





# 11. TELECOMMUNICATIONS

The industry experiences a technological transition, where the demand for data traffic has exceeded voice communications. The government, large companies, small and medium-sized providers, and increased demand have boosted the use of the Internet.

The average fixed internet speed in Brazil is around 25 Mbps for download and 12 Mbps for upload, being in the 62<sup>nd</sup>. position in the ranking of the 130 countries<sup>49</sup> with the fastest internet, and 6<sup>th</sup> in number of fixed internet access. Regarding mobile internet, the average access speed is 20 Mbps for download and 8 Mbps for upload, ranked in the 67<sup>th</sup>. position.

While the average internet speed has increased in recent years, there is still a need to expand the infrastructure networks, improve stability and coverage, extend reach to regions far from urban centers, and increase the number of antennas in municipalities.

Brazil needs investments of around R\$ 200 billion in infrastructure (fixed/mobile) - over the next 10 years - to reach 90% of the population<sup>50</sup>, providing high access speed (over 100 Mbps), and optical fiber (FTTH - Fiber To The Home).

## Index of use of telecommunications services in Brazilian households by region.

Region	Telephone <sup>51</sup>		Broadband <sup>52</sup>		Cable TV <sup>53</sup>	
	Conventional Fixed (%)	Mobile (%)	Fixed (%)	Mobile (%)	Urban (%)	Rural (%)
North	10.6	89.7	48.8	88.7	25.2	8.9
Northeast	12.3	89.9	74.2	63.8	21.1	7.8
Southeast	45.9	94.4	75.2	83.5	44.2	26.6
South	35.3	95.4	77.2	78.6	36.9	19.9
Midwest	28.3	96.9	74.7	82	31.8	15.5
<b>Brazil*</b>	<b>31%</b>	<b>93%</b>	<b>73%</b>	<b>78%</b>	<b>36%</b>	<b>14%</b>

\*Total of 70.4 million households in Brazil

Source: [PNAD TIC 2017](#)

49 World's fixed access speed ranking, Ookla 2018.

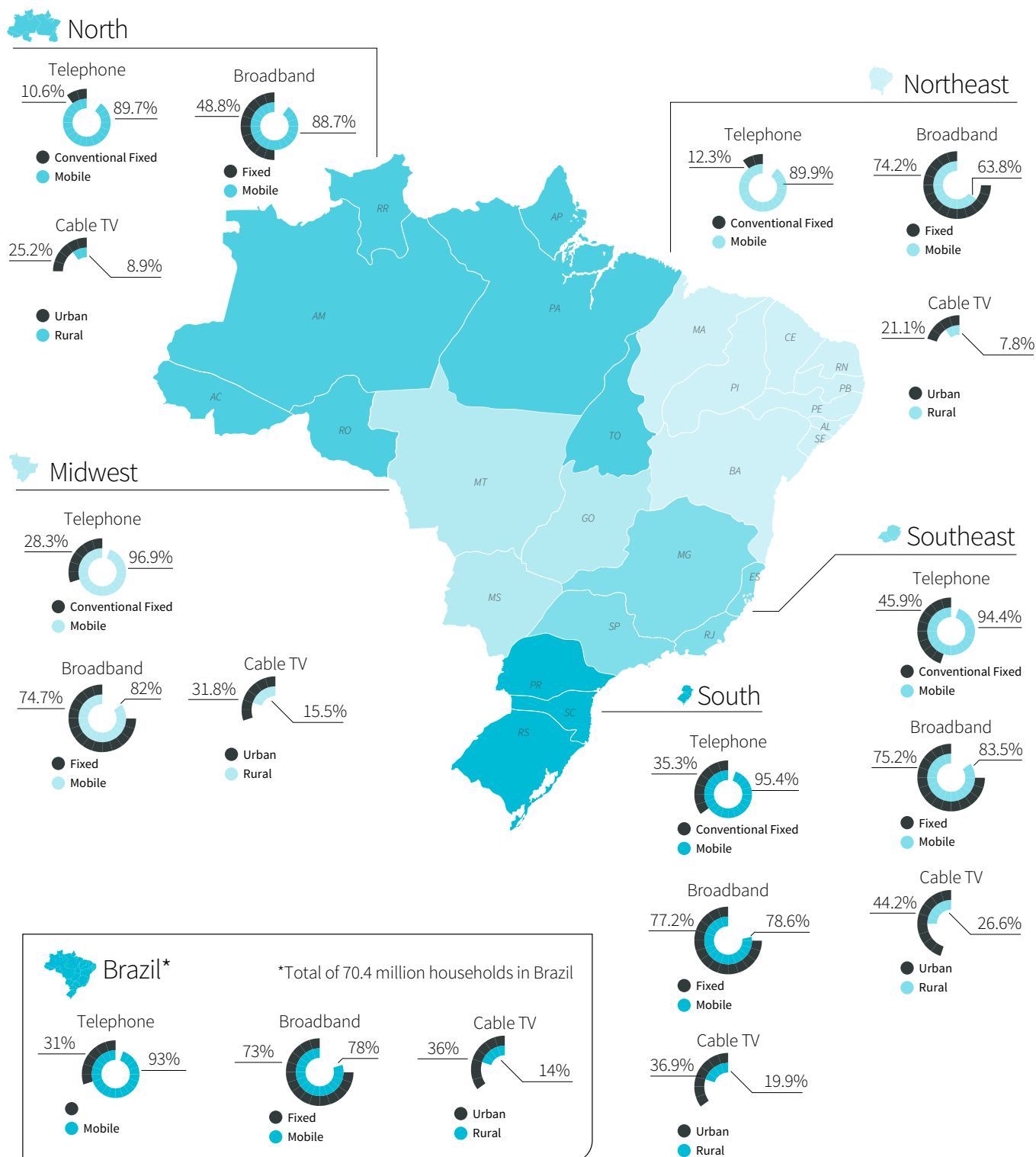
50 Painel Telebrasil, Boston Consulting Group 2017.

51 Total households with telephone: 66.8 million.

52 Households using the Internet among the total permanent households: 52.7 million.

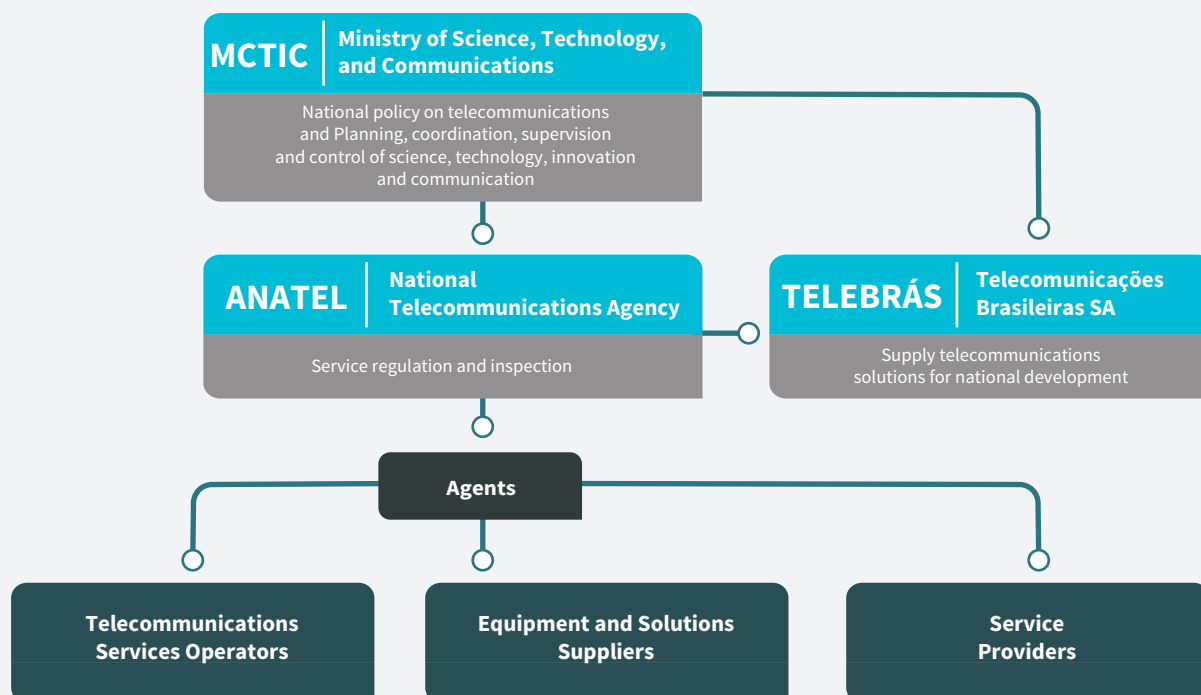
53 Total households with television: 68.1 million.

## Index of use of telecommunications services in Brazilian households by region.



Source: PNAD TIC 2017

## 11.1. INSTITUTIONAL STRUCTURE



### [Ministry of Science, Technology, Innovation and Communications](#) - **MCTIC**

The MCTIC is an agency of the federal direct administration, with powers to formulate national policies on telecommunications, broadcasting, postal services, scientific and technological research and incentive to innovation.

### [National Telecommunications Agency](#) - **Anatel**

ANATEL was the first regulatory agency set up in Brazil in 1997. It is a special agency, linked to MCTIC, and aims to promote telecommunications development with modern and efficient infrastructure and to offer adequate and diversified services at fair prices throughout the country.

### [Brazilian Telecommunications](#) - **Telebras**

Telebras is a state-owned mixed-economy company founded in the early 70s in order to plan, deploy and operate telecommunications through a company-pole in each state. Over the years, it has driven the merger of existing telephone companies through the acquisition of their net assets and/or controlling interest. The General Telecommunications Law - LGT was responsible, in 2017, for the breakdown of the state monopoly in the sector and the auction of the Telebras system occurred in the subsequent year.

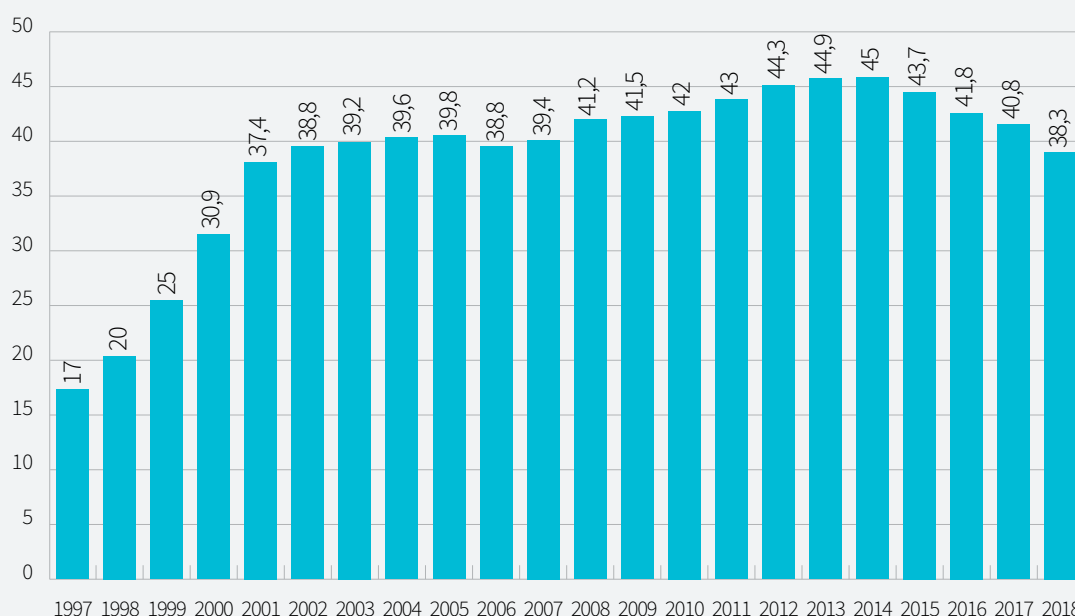
In 2010, the company<sup>54</sup> was reactivated to manage the National Broadband Program - PNBL in order to expand the optical fiber network and offer services at affordable prices. Another goal of Telebras is the connectivity with global networks, expanding the capillarity of the backbone network to South America and the Brazil-Europe Submarine Cable.

## 11.2. FIXED TELEPHONY

Concessionaires or authorized providers of Fixed Telephone Service (STFC) provide fixed voice communication facilities. By 2017, 31% of households had fixed telephone, a drop of 3% over the previous year.

The service is present in all Brazilian municipalities and available to the entire population. There has been significant progress in fixed telephony after privatization and one of the causes of its stability over the years is the migration to mobile cellphones.

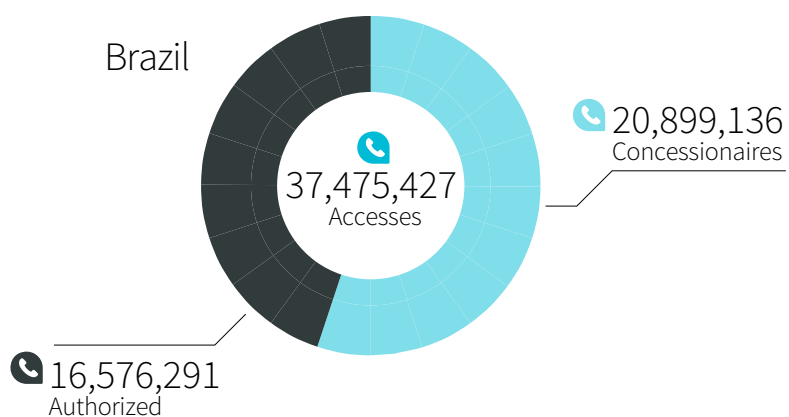
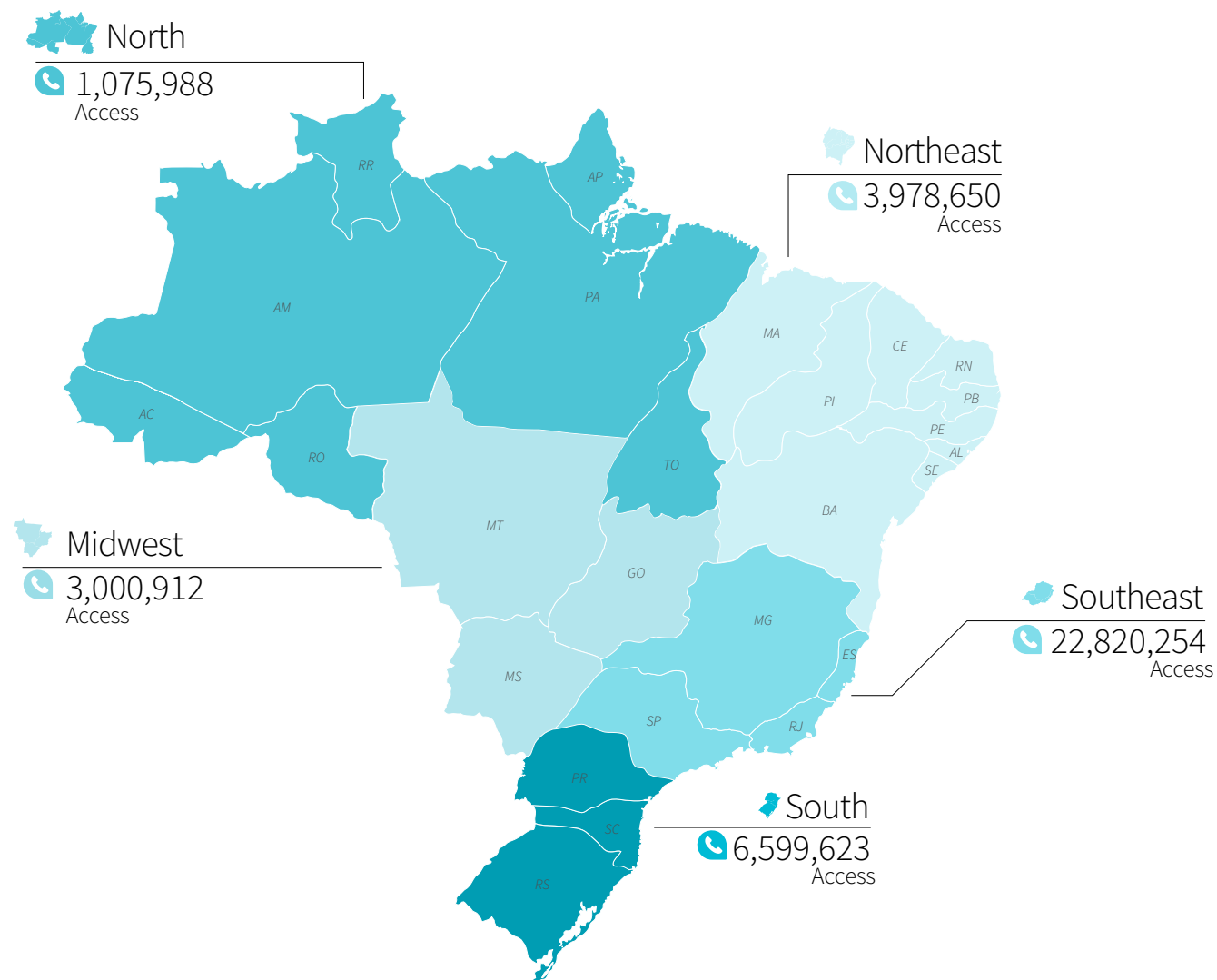
### Fixed accesses and public terminals (in millions)



Source: [Anatel](#), [Teleco](#) and [Sinditelebrasil](#)

54 Through Decree No. 7,175/2010.

## Accesses by Region\* (Dec./2018)



\*Excluding Public Telephone Line (TUPs)

Source: Anatel, Teleco, Sinditelebrasil

### Accesses by region\* (Dec./2018)

Region	Accesses	Concessionaires	Authorized
Midwest	3,000,912	20,899,136	16,576,291
Northeast	3,978,650		
North	1,075,988		
Southeast	22,820,254		
South	6,599,623		
Brazil	37,475,427		

\*excluding Public Telephone Line (TUPs)

Source: [Anatel](#), [Teleco](#) and [Sinditelebrasil](#)

### Concessions

Currently, 70 concession contracts are in force, 34 of them being local, 35 national long distance and 1 international long distance. These contracts were signed in 1998 and will end by 2025.

Among the main obligations established are compliance with the General Plans of Quality Targets (PGMQ)<sup>55</sup> and the Universalization Targets (PGMU)<sup>56</sup>. The contracts can be revised and renewed every 5 years in order to set new conditions, universalization and quality goals.

### Region of the concessionaires

Concessionaires	State/Regions <sup>61</sup>
Oi	Except for the State of São Paulo (Regions I and II)
Telefonica	Only the State of São Paulo (Region III)
Algar Telecom	Triângulo Mineiro (area in the state of Minas Gerais), some municipalities and towns of GO, SP and MS (Regions I, II and III)
Copel / Sercomtel	Paraná inland (Region II)
Embratel	Long distance across Brazil

Source: [Oi](#), [Telefonica](#), [AlgarTelecom](#), [Copel Telecom](#), [Sercomtel](#), [Embratel](#)

55 It establishes indicators and quality goals, ensuring technological advances and adding gains to the quality of fixed telephony.

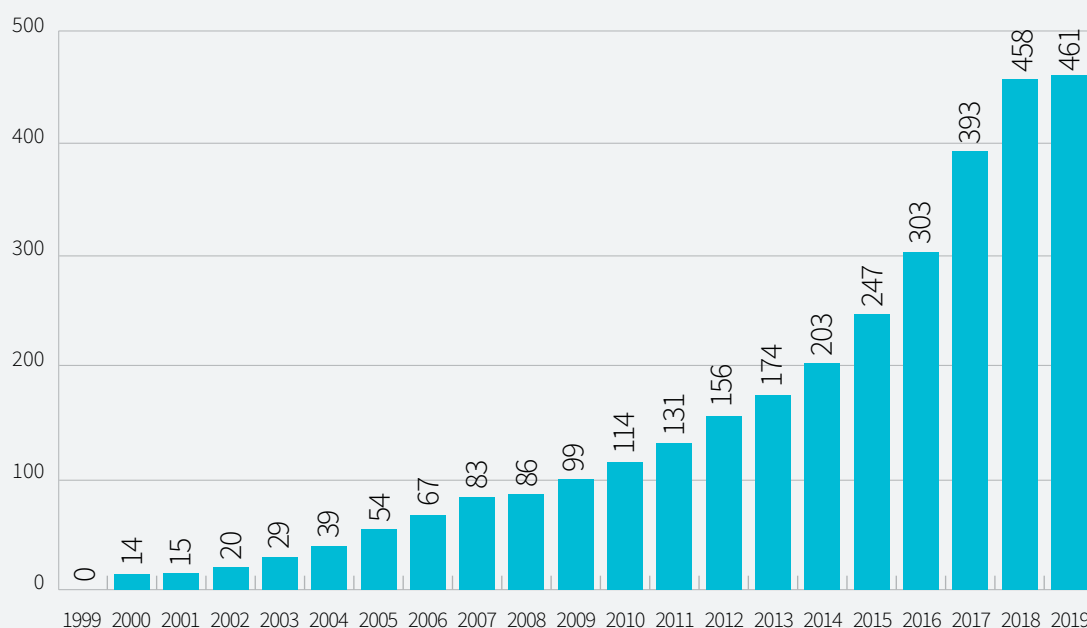
56 It establishes goals for the universalization of services rendered and revised together with the concession contracts.

57 **Region I:** States AM, RR, AP, PA, MA, CE, RN, PI, BA, PB, PE, AL, SE, MG, ES and RJ; **Region II:** AC, RO, TO, MT, MS, GO, PR, SC, RS and DF; **Region III:** SP

## Authorizations

Companies authorized to provide fixed telephone services have no contract or service obligations, and also no regulated tariffs. However, they need to obey laws and rules applicable to all telecommunications amenities.

### STFC Authorizations



Source: [Teleco](#), [Anatel](#)

## 11.3. MOBILE

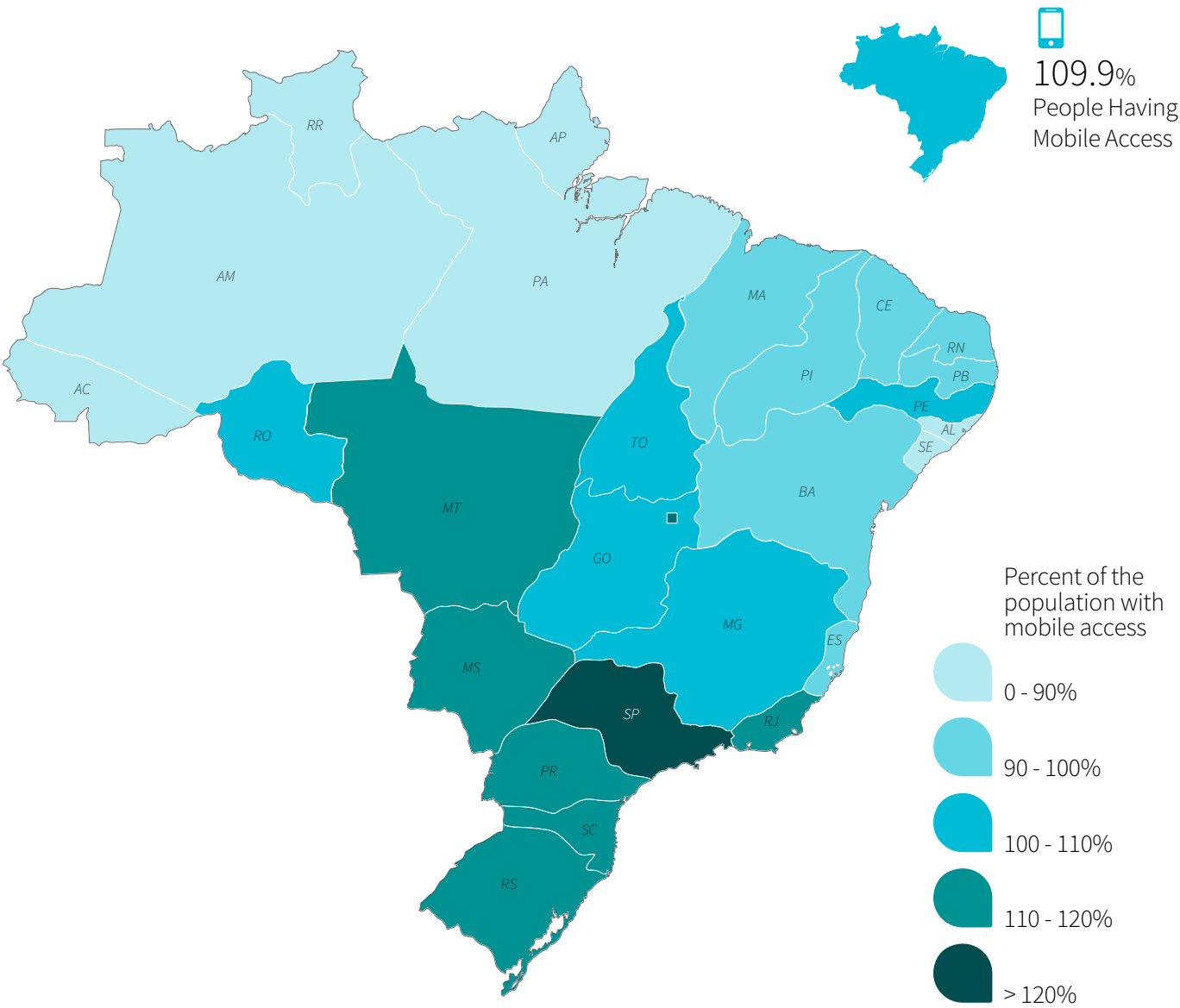
In order to provide mobile communication services, it is necessary to have a Personal Mobile Service (SMP) authorization obtained through a bidding procedure. It is provided under a private regime, with no universalization and continuity obligations, but with commitments to quality and coverage. The provision offer depends on the commercial interest of the providers.

Cellphones are highly accepted by the population and experienced accelerated growth, with significant investments in the country. With the arrival of prepaid plans and initiatives to facilitate the acquisition, even people with low purchasing power can have cellphones.

Currently, the country has a density of 109 cellphones/100 inhabitants, i.e. more than one cell-phone per inhabitant.

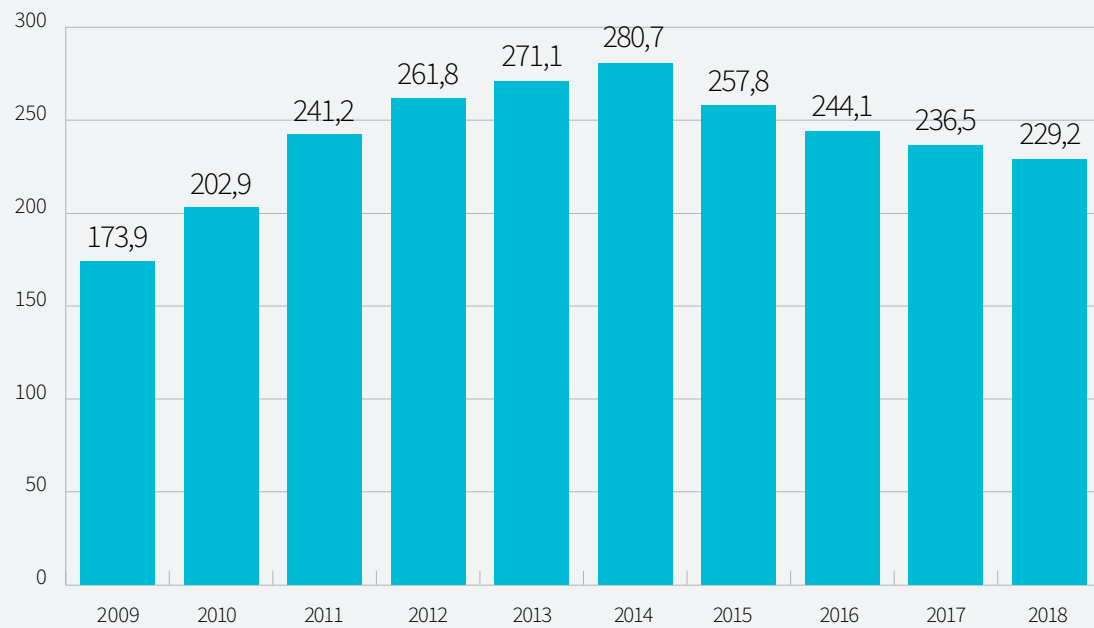


Density of Mobile Access (100-inhabitant group)



Source: [Anatel](#)

### Amount of cellphones (million)



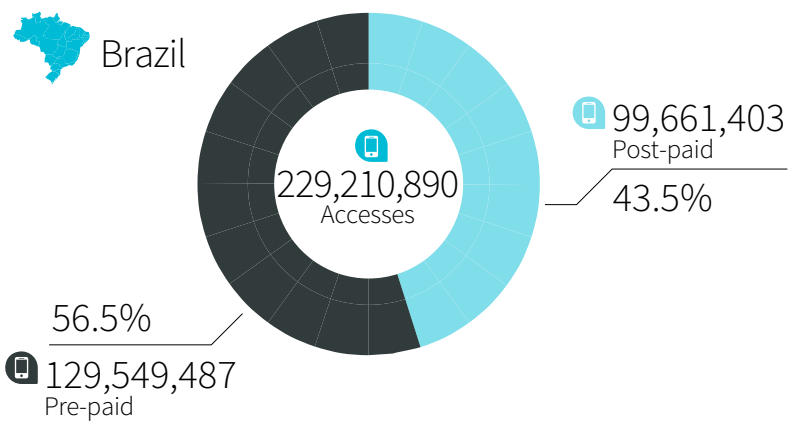
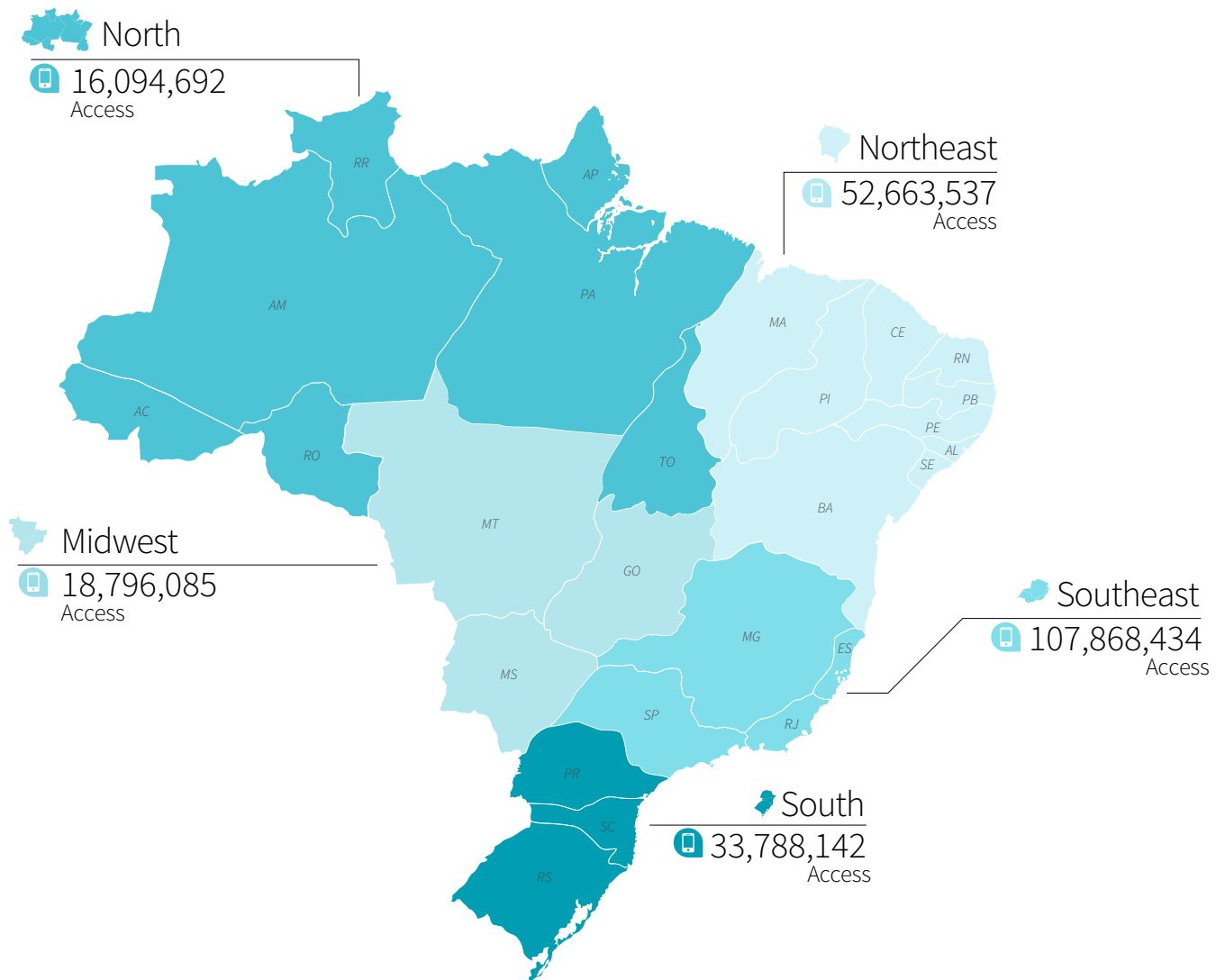
Source: [Anatel](#), [Teleco](#) and [Sinditelebrasil](#)

### Mobile access by region (Dec./2018)

Region	Accesses	Pre-paid	Post-paid
North	16,094,692	129,549,487 (56.5%)	99,661,403 (43.5%)
Northeast	52,663,537		
Southeast	107,868,434		
South	33,788,142		
Midwest	18,796,085		
<b>Brazil</b>	<b>229,210,890</b>		

Source: [Anatel](#)

## Mobile access by region (Dec./2018)



Source: Anatel

### Mobile access by technology (Dec./2018)

Technology Generation	Technologies	Mobile accesses by technology (in thousands)
1G	AMPS (Analogical)	0
2G	GSM, Data, Data up to 256 kbps, CDMA, TDMA, CDMA2000	24,850
3G	WCDMA, Data > 256kbps, Broadband data	54,729
4G	LTE	129,842
M2M5 <sup>62</sup>	Standard M2M, Special M2M	19,790

Source: [Anatel](#), [Teleco](#)

## 11.4. MOBILE INTERNET

As for mobile telephony, the mobile internet service is provided through a Personal Mobile Service (SMP) authorization, through a bidding process.

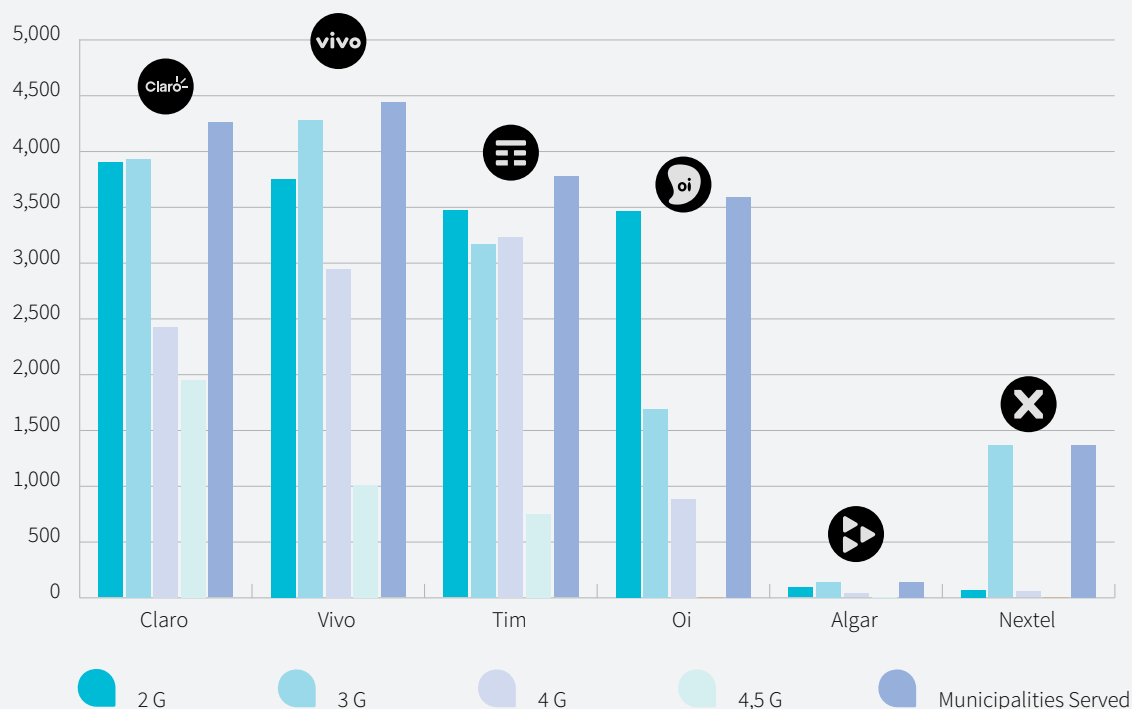
### Users by technology (Dec./2018)

Technology/Service Generation	Users (in thousands)
4G (LTE)	129,842
3G (WCDMA)	52,371
Broadband Data Terminal	2,358

Source: [Anatel](#)

58 The M2M communication is intended for automatic communication between equipment with no human interaction or intervention.

## Municipalities by Operator and Technology (Jan./2019)



\*excluding Sercomtel that serves only two municipalities with 2G and 3G technologies.

Source: [Anatel](#), [Teleco](#)

The increased traffic on internet, new technologies and the need for greater bandwidth per user require more antennas than the country currently has. Mobile data traffic is expected to grow in the country at an annual average rate of 41%<sup>59</sup>.

Brazil has about 93 thousand antennas. In the city of São Paulo, for example, there are about 5,600 towers and an average of 6,800 antennas (an average of 3,400 users/antenna).

**The limit for a suitable mobile Internet connection is 1,000 to 1,500 users per antenna.**

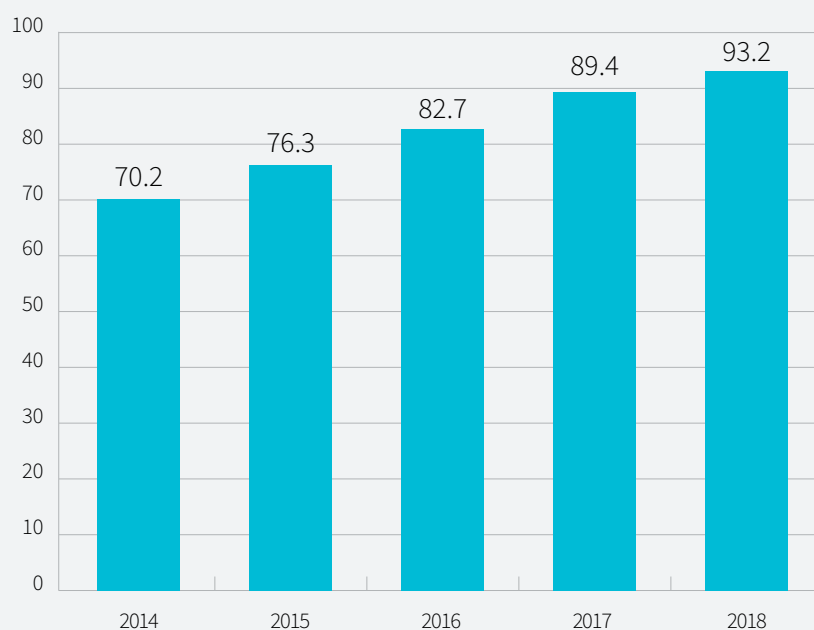
To understand the antenna deficit, it must be noted that Italy has the same amount as Brazil, but the country's size is the same as the state of Rio Grande do Sul (equivalent to 3.3% of the Brazilian territory).

The Antenna Law<sup>60</sup> establishes general rules applicable to the infrastructure licensing, installation and sharing in order to accelerate the sector development.

59 Febratel, 2018

60 [Law No. 13,116/2015](#)

## Number of antennas in Brazil



Source: [Anatel](#), [Teleco](#)

## Technologies and the need for antennas

Technology	Number of antennas <sup>65</sup>	Applications
2G	X	Voice and SMS
3G	1.5X	Voice and data
4G	3.0X	Video and Streaming
5G	10 to 15X	IoT, standalone cars, health monitoring, industrial applications

Source: [SindiTelebrasil](#)

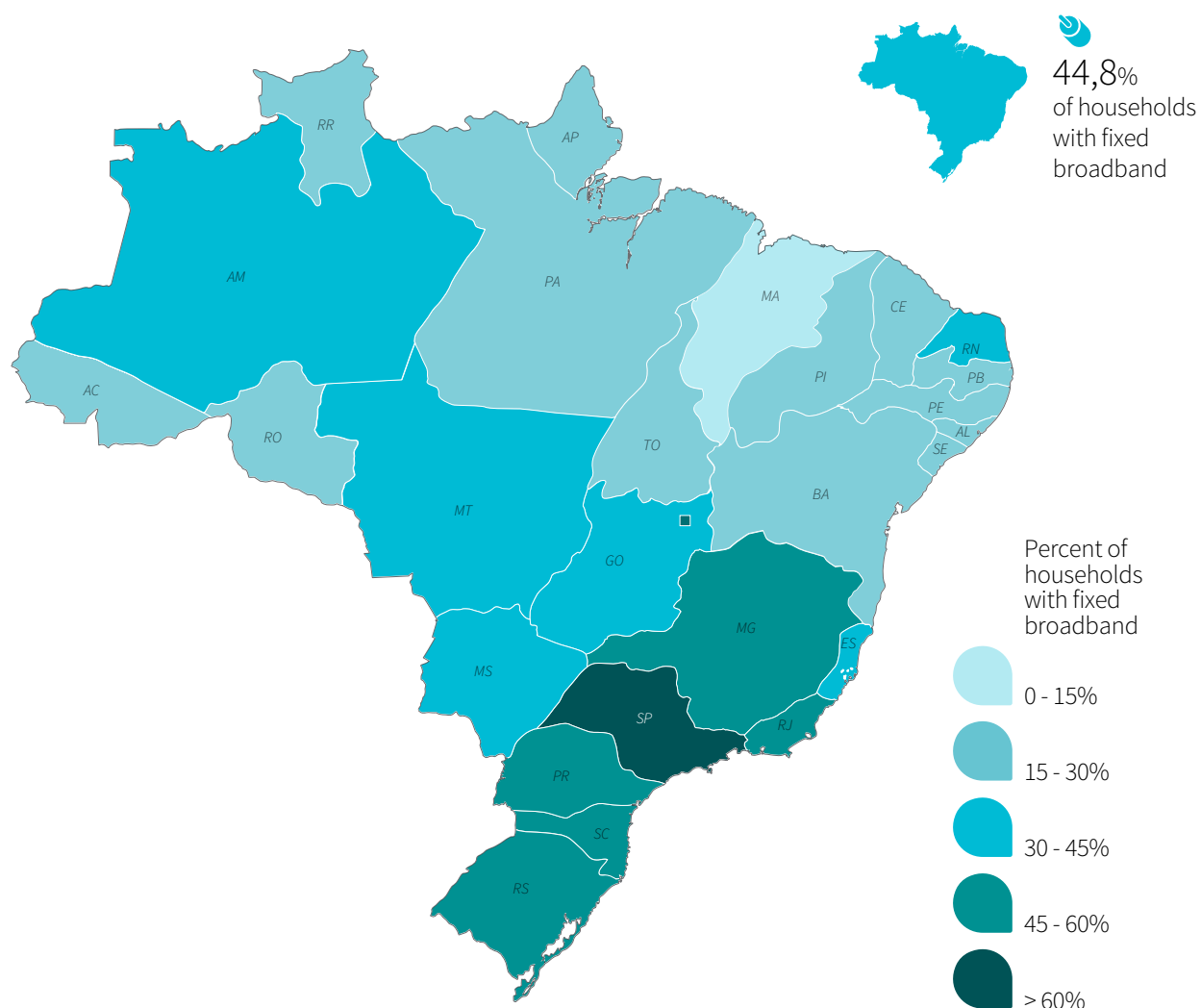
## 11.5. FIXED INTERNET

The Fixed Broadband Internet, provided under authorization of the Multimedia Communication Service (SCM), features voice communication and data transmission by both wire (metallic pair) and optical fiber and by radio or satellite.

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61 Estimate for similar situations without considering different frequencies.

## Density fixed Internet (Jan./2019)



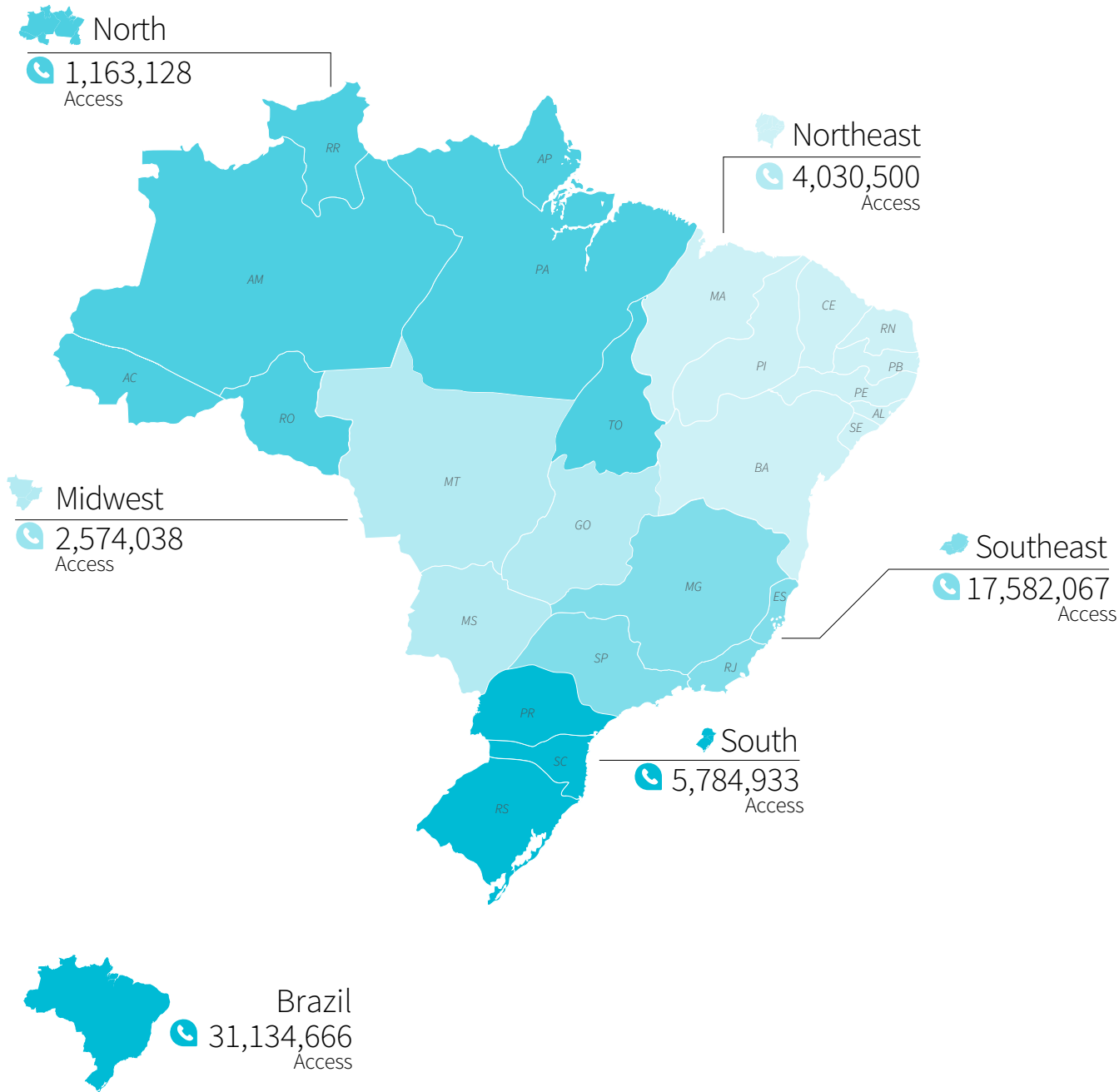
Source: [Anatel](#)

## Fixed access by region (Jan./2019)

Region	Accesses
North	1,163,128
Northeast	4,030,500
Southeast	17,582,067
South	5,784,933
Midwest	2,574,038
<b>Brazil</b>	<b>31,134,666</b>

Source: [Anatel](#)

# Fixed access by region (Jan./2019)

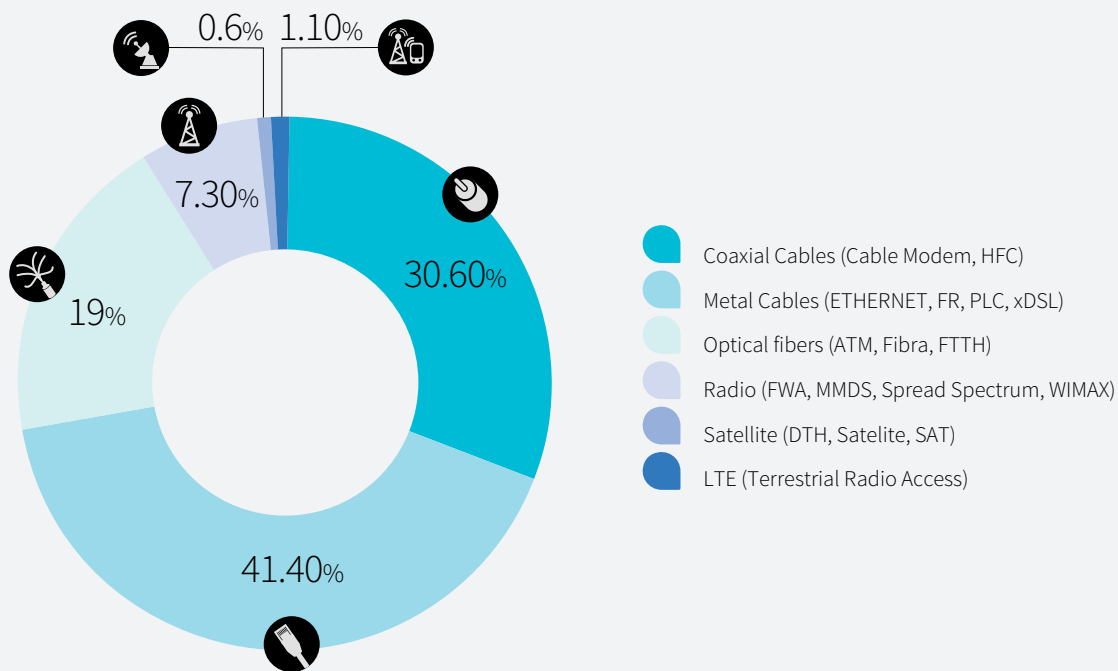


Source: Anatel



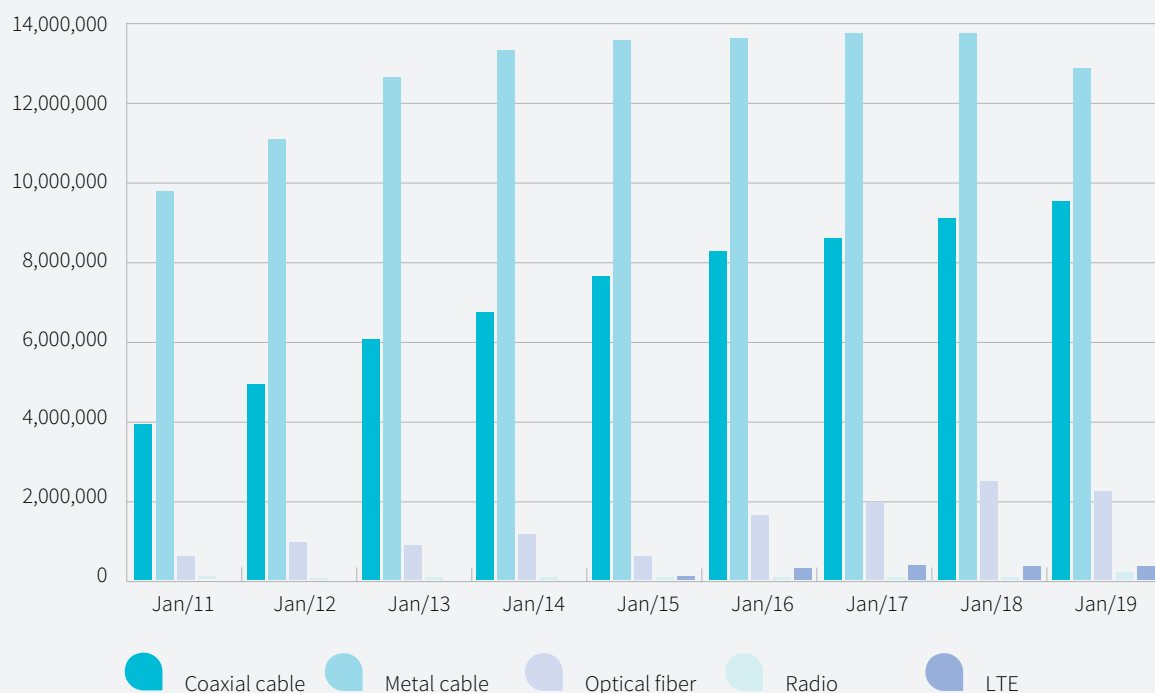
Fixed internet has experienced an important growth rate, but its penetration is still relatively low, despite the consistent evolution of accesses.

**Accesses by technology (Jan./2019)**



Source: [Anatel](#)

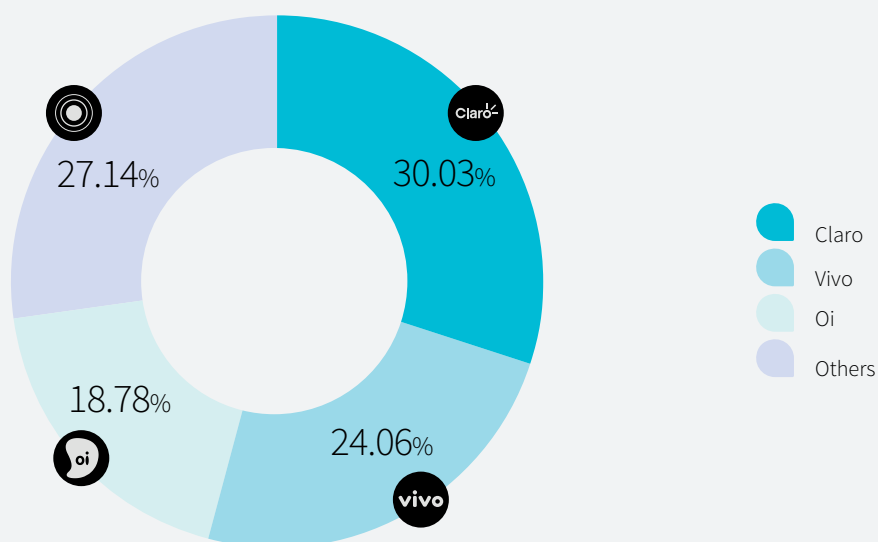
### Access evolution (Jan./2019)



Source: [Anatel](#)

The country ended 2018 with 31.1 million active fixed broadband contracts, a growth of 6.1% (1.8 million subscribers) over the previous year<sup>62</sup>.

### Market Share (Feb./2019)



Source: [Teleco](#)

62 Anatel, January/2019

## REGIONAL ACCESS PROVIDERS

Ranked as small providers, regional access providers<sup>63</sup> cooperate with the government's promise to universalize internet. Together, they are the 3rd. largest fixed broadband provider in the country. They are in small cities and inland locations, moving from residential to corporate market, offering value-added services.

They are responsible for about 70% of the new accesses and rely on a base of 7.4 million active contracts, which means a growth of 28.5% (1.6 million subscribers) over the previous year<sup>64</sup>.

## 11.6. UNIVERSALIZATION PLAN

Currently, the government works on the National Plan for Connectivity (PNC), whose priority is to deploy 3G or higher in remote regions and 4G in all municipalities. The government's major challenge is funding to meet these goals.

## 11.7. CABLE TV

The Southeast Region holds the highest percentage of Cable TV service, while the Northeast Region has the lowest rate.

### Accesses by region (Jan./2019)

Region	Accesses
North	792,997
Northeast	2,124,809
Southeast	10,588,900
South	2,714,338
Midwest	1,239,928
<b>Brazil</b>	<b>17,460,972</b>

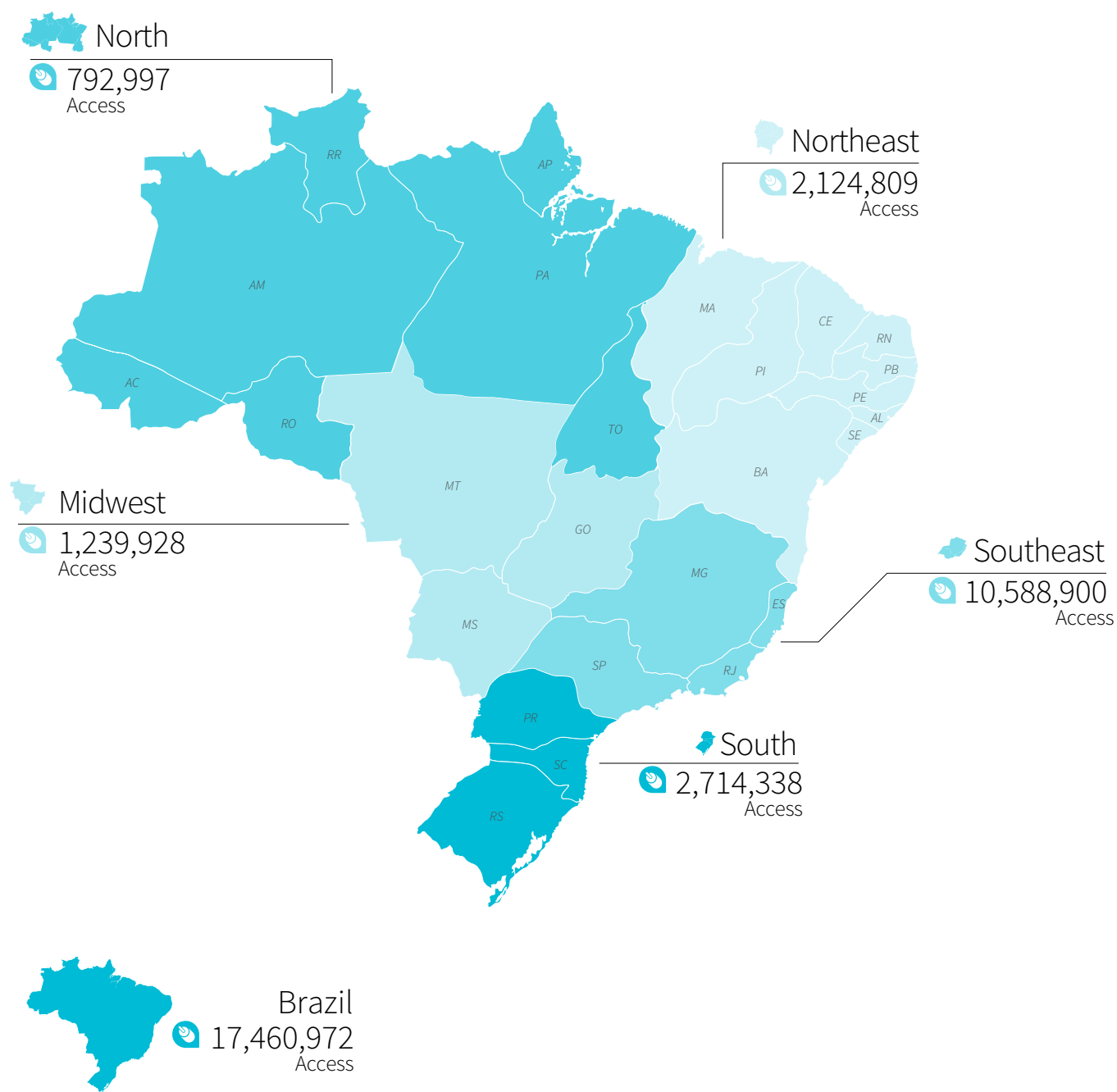
Source: [Anatel](#)

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63 This includes all SCM providers, except Claro, Vivo and Oi.

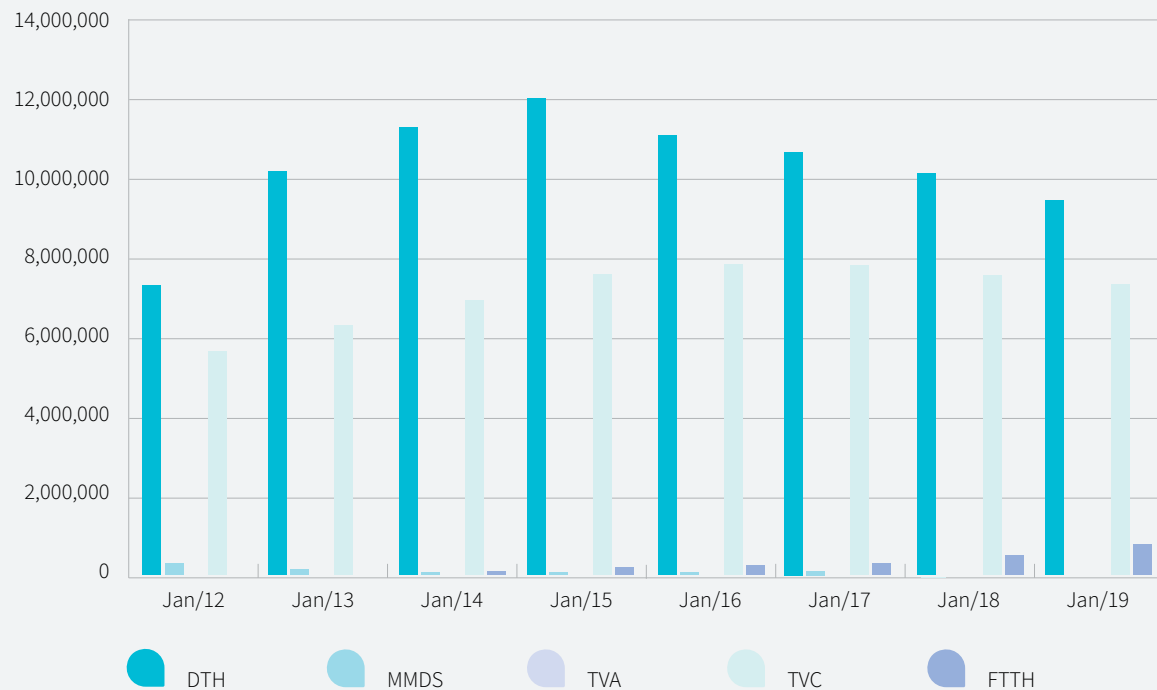
64 [Telesintese, 2018](#)

## Accesses by Region\* (Jan./2019)



Source: Anatel.

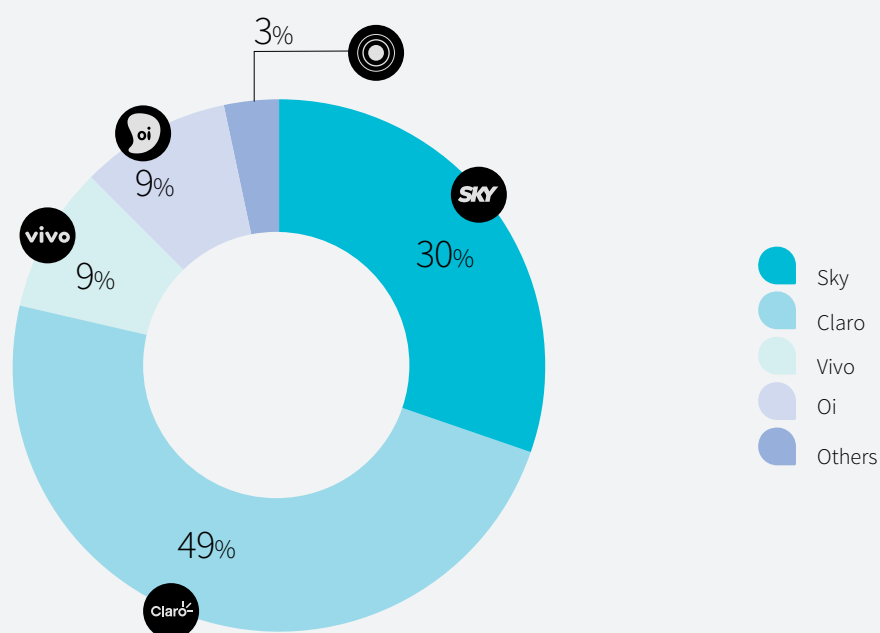
### Accesses per technology



Source: [Anatel](#)

The number of clients has dramatically declined in recent years, with a trend to continue decreasing. The market is concentrated in four operators, which together account for 97% of the share.

### Market Share (Feb./2019)



Source: [Teleco](#)

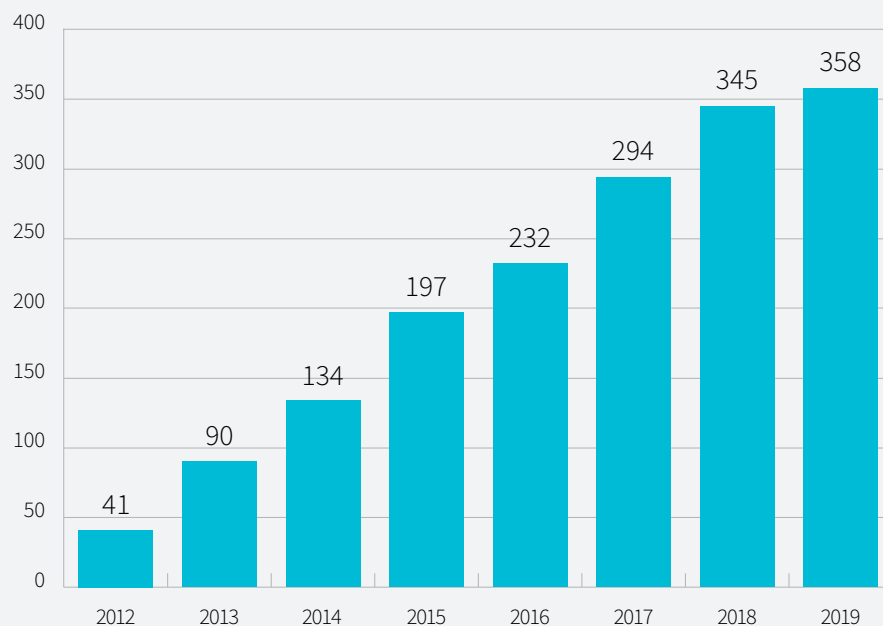
## CONDITIONED ACCESS SERVICE – (SEAC)

SeAC<sup>65</sup> opened the Cable TV market and established that no new concessions or authorizations could be granted<sup>66</sup>. Any interested company, which already has Cable TV concession, can request to adjust itself to the SeAC. Most of the new operators are made up of small Internet providers, with a joint service offer.

65 Created by Law No. 12,485/2011.

66 For TVC, DTH, MMDS and TVA.

### SeAC Providers (Jan./2019)



Source: [Teleco](#)

## 11.8. BRAZILIAN DEFENSE AND STRATEGIC COMMUNICATIONS SATELLITE - SGDC<sup>67</sup>

The first Brazilian geostationary satellite for civil and military use was launched in 2017. Its estimated useful life is 17 years and its investments were made by a partnership between MCTIC and the Ministry of Defense.

SGDC features a Ka Band for civil use, to which Telebras holds the exclusive right to provide connectivity to thousands of schools, health centers, government institutions and isolated communities. The satellite's Band X for military use, corresponds to 30% of its capacity and is managed exclusively by the Brazilian Armed Forces.

Its commercial exploitation to offer low-cost broadband services has not begun yet, and it will serve more than 50 thousand locations, distributed among more than 4 thousand Brazilian municipalities, which are in need of these services.

67 Visiona (a joint venture between TELEBRAS and Embraer), created in 2012, is responsible for the satellite purchase and operation.

## 11.9. BUSINESS OPPORTUNITIES

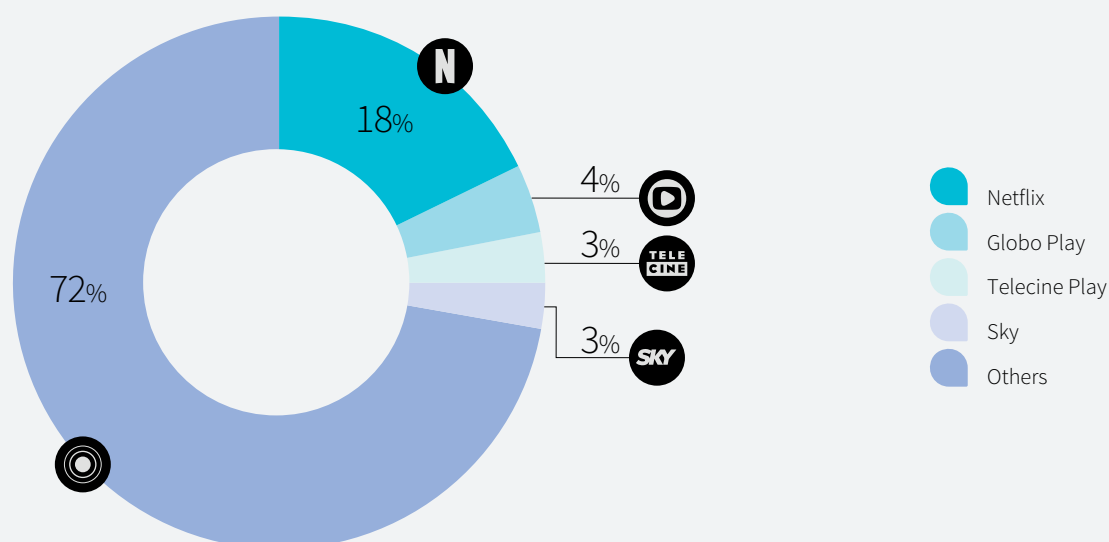
Investment opportunities are unlimited due to the fact that many Brazilians, companies and industries still do not have top quality services and, in some cases, have no connectivity. Telecommunications networks, especially in areas not yet covered, lack investments in both fixed and mobile broadband and satellite networks.

The increased speed, increased demand for streaming, Big Data and corporate software are areas that already request more infrastructure and, although there are many data centers in Brazil, the network is smaller than in developed countries. In this regard, MCTIC has designed risk reduction benefits to expand the storage of large volumes of data.

Data infrastructure model is evolving from the content in another country to a model modal closer to the final user, i.e. with fiber-in-residence and Content Delivery Network (CDN's)<sup>68</sup>, reducing costs and helping the international band traffic.

Over The Tops - OTTs are content providers that distribute streaming through the broadband infrastructure of providers - which traditionally operate as controllers or distributors of such content. They are generally accessed through applications on mobile devices and allow users to have flexible use. In 2017, Brazil was ranked in 8<sup>th</sup>. in the world's OTT market<sup>69</sup> and the projection for 2019 is to reach the 5<sup>th</sup>. position.

### OTT Market Share in Brazil (2018)



Source: [Consultoria Business Bureau, 2018](#)

68 CDNs are specialized companies to bring content closer to the user, with servers in multiple datacenters. Companies with large volumes of data use this technology to achieve performance, availability and security gains.

69 Consultoria Frost & Sullivan, 2017.



Technology permeates the most diverse economic segments having connectivity as a basis. The Internet of Things - IoT is already a reality in the country and has been contributing not only to urban planning but also to industries, commerce and residences, optimizing costs and operations.

The agribusiness sector stands out in the use of irrigation systems, software and drones for efficiently handling crops and herds.

The arrival of 5G technology is already a reality in some countries and is expected to be in use in Brazil by the middle of 2022. The need for towers, poles, antennas, radios and optical fiber will attract investments from not only operators, but also from equipment and services companies.

The vision of the future is essential to emphasize the importance that public lighting poles will have. The modernization of the city's public lighting network should attract investments not only from operators but also to Smart Grids in the energy industry, traffic control and public safety, among others, allowing a more efficient and intelligent information and actions management.

The potential for adoption of digital technologies may reach about US\$ 200 billion by 2025. If the use of the IoT in the industry is taken into account the amount may reach US\$ 11 to 45 billion, divided into health: US\$ 5 to 39 billion; towns: US\$ 13 to 27 billion, and inland cities: US\$ 5 to 21 billion<sup>70</sup>. In addition, IoT diffusion might create from 830 thousand to 1.16 million new jobs, leading to a growth of 2% in GDP, representing an addition of about R\$ 122 billion by 2025<sup>71</sup>.

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70 McKinsey & Company, 2018.

71 Analysis of the consortium formed by BNDES (joint initiative together with the MCTIC, called "IoT Bytes" (Bytes de IoT)).

## 11.10. LEGAL AND REGULATORY FRAMEWORK

[Law No. 9,472/1997](#) established the organization of telecommunications services, the creation and operation of a regulatory body and other institutional aspects.

[Law No. 9,998/2000](#) created the Fund for Universalization of Telecommunications Services - FUST.

[Law No. 10,052/2000](#) created the Fund for Telecommunications Technological Development – Funttel.

[Law No. 12,485/2011](#) established the conditioned access audiovisual communication and other measures.

[Law No. 12,965/2014](#), called the “Civil Internet Framework”, established principles, guarantees, rights and duties for the use of the Internet in Brazil.

[Law No. 13,116/2015](#) - General Antenna Law. Establishes general standards for deployment and sharing of telecommunications infrastructure.

[Law No. 13,709/2018](#), known as the “General Law of Protection of Personal Data”, regulated the activities of personal data processing on the Internet.



# 12. SANITATION

Sanitation, defined as the set of infrastructures and operational facilities for **(i)** water supply; **(ii)** sewage collection and treatment; **(iii)** urban cleaning and management, of urban solid waste, and **(iv)** stormwater management<sup>72</sup>, is a right guaranteed to all Brazilians.

It is the least developed infrastructure sector and presents vast investment opportunities. Almost 100% of Brazilian households have electricity; there are more cellphone lines than citizens, but sanitation services have not yet reached all Brazilian households.

## Improving the sanitation in Brazil is an urgent task.

The expansion of the coverage of sanitation services is fundamental to help reduce the incidence of waterborne diseases, decrease infant mortality, improve people's health, and consequently reduce public health expenses. According to the World Health Organization (WHO), every dollar invested in sanitation results in savings of US\$ 4.3 in health<sup>73</sup>.

	NORTH	NORTHEAST	MIDWEST	SOUTHEAST	SOUTH
<b>Water Supply</b>	57.49%	73.25%	90.13%	91.25%	89.68%
<b>Water Loss</b>	55.14%	46.25%	34.14%	34.35%	36.54%
<b>Sewage Collection</b>	10.24%	26.87%	53.88%	78.56%	43.93%
<b>Sewage Treatment</b>	22.58%	34.73%	52.02%	50.39%	44.93%
<b>RSU Collected</b>	6.5%	22.4%	7.3%	52.9%	10.9%

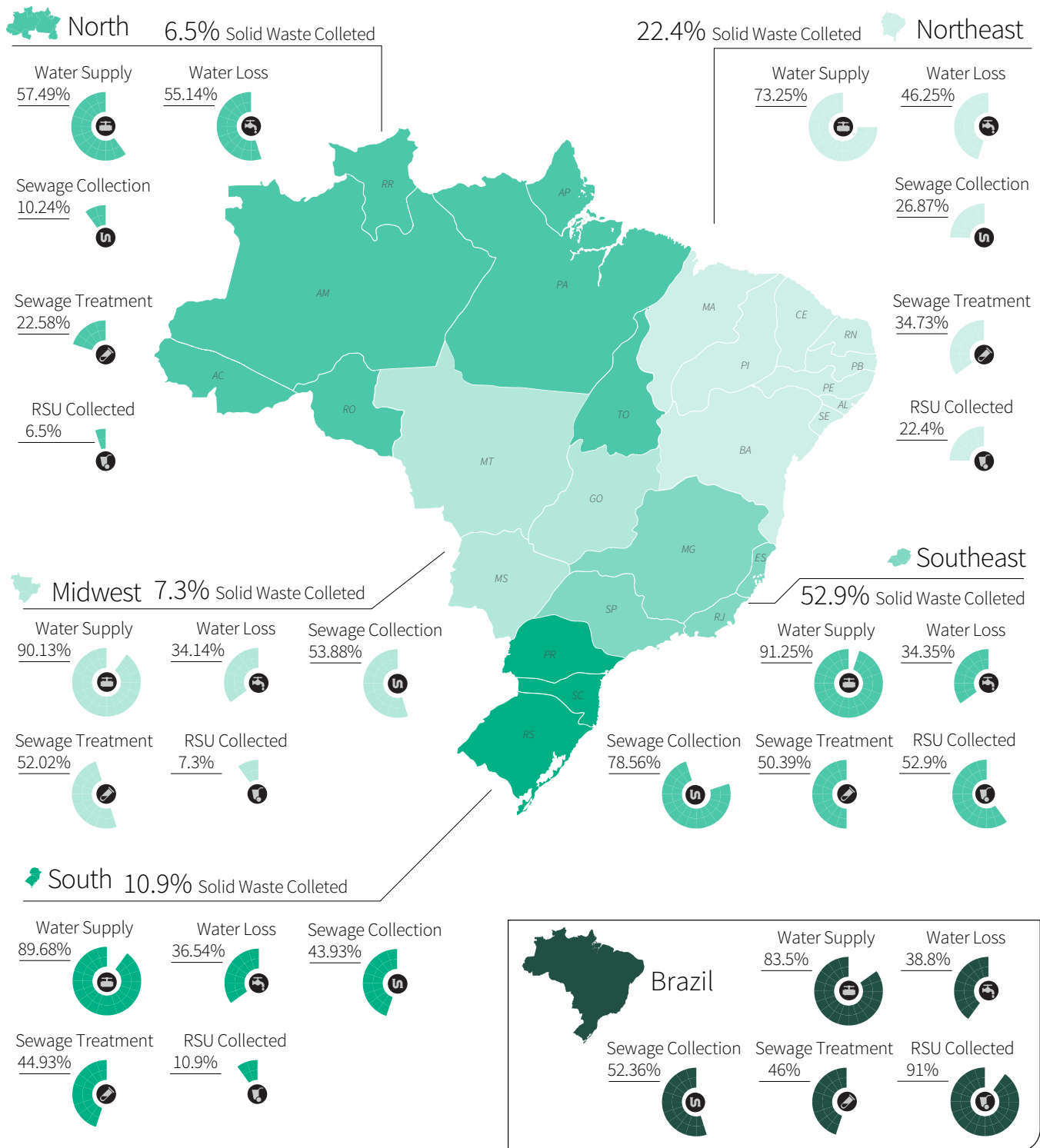
Source: [SNIS](#)

<sup>72</sup> [Law 11.445/2007](#)

<sup>73</sup> [United Nations in Brazil – UN](#)



## Unify Map and Table in One Single Map - Artwork



Source: [Overview of Solid Waste in Brazil 2017 ABRELPE](#)

## 12.1. WATER SUPPLY

Water supply involves all the activities, infrastructures and facilities required for supplying drinking water, from withdrawals to the building connections, and respective metering instruments.

This is the most developed sanitation indicator in the country. Even so, almost 35 million Brazilians (16.5% of the population) don't have water supply. The North region has the worst service, while the Southeast has the best.

Regarding efficiency, Brazilian operators lose, on average, 38.8% of the produced water. In some States, this number exceeds 70%<sup>74</sup>.

**IT IS NECESSARY NOT ONLY TO INCREASE THE COVERAGE BUT ALSO TO IMPROVE THE EFFICIENCY OF THE COMPANIES.**

Reducing losses not only preserves the water resources, but also reduces the need to increase water withdrawal, thus improving the financial health of the companies.

## 12.2. SEWAGE COLLECTION AND TREATMENT

Sanitary sewage covers the activities, infrastructures and operational facilities associated with sewage collection, transportation and treatment, from the user connections to the final release.

Again, the North and Southeast regions have the worst and the best collection indicators, respectively. In Brazil, 52.36% of the population has its sewage collected, whereas almost 100 million Brazilians have no access to this service.

Barely 46% of the total sewage produced in the country is treated. The Northern region is the one with the lowest index (only 23%), while the Midwest region is the one with the highest treatment rate (52%).

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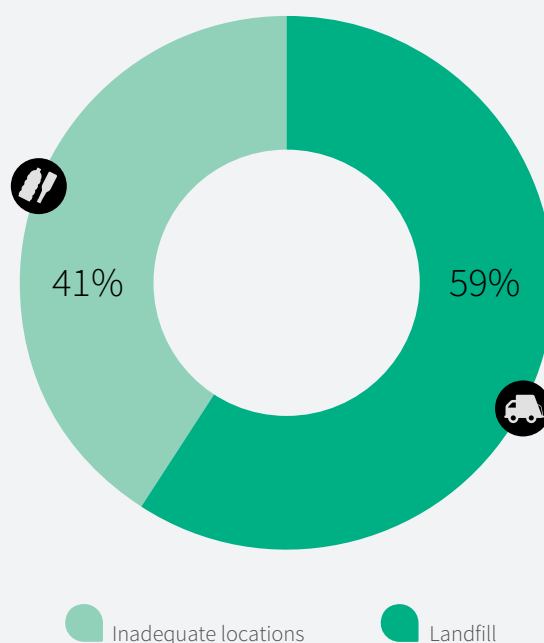
74 [KPMG, 2018](#).

## 12.3. URBAN CLEANING AND URBAN SOLID WASTE MANAGEMENT

It involves the set of activities, infrastructures and operational facilities for the collection, transportation, treatment and final destination of urban waste and garbage.

91% of the urban waste generated (78.4 million tons) is collected, which means that 7 million tons are not collected and, consequently, have an improper destination.

### Urban waste final disposal



Source: [Abrelpe](#), 2017

## 12.4. STORMWATER MANAGEMENT

It is the set of activities, infrastructures and operational facilities related to stormwater management.

Due to the disorderly growth of cities, flooding and overflow are common. Part of the problem is the soil waterproofing, which does not support the water load in rainy periods. Between 2012 and 2017, 51% of the municipalities had floods or overflows<sup>75</sup>.

The urban drainage service is provided by City Halls and in the majority of municipalities, there are no regulatory instruments or specific planning for rainwater management.

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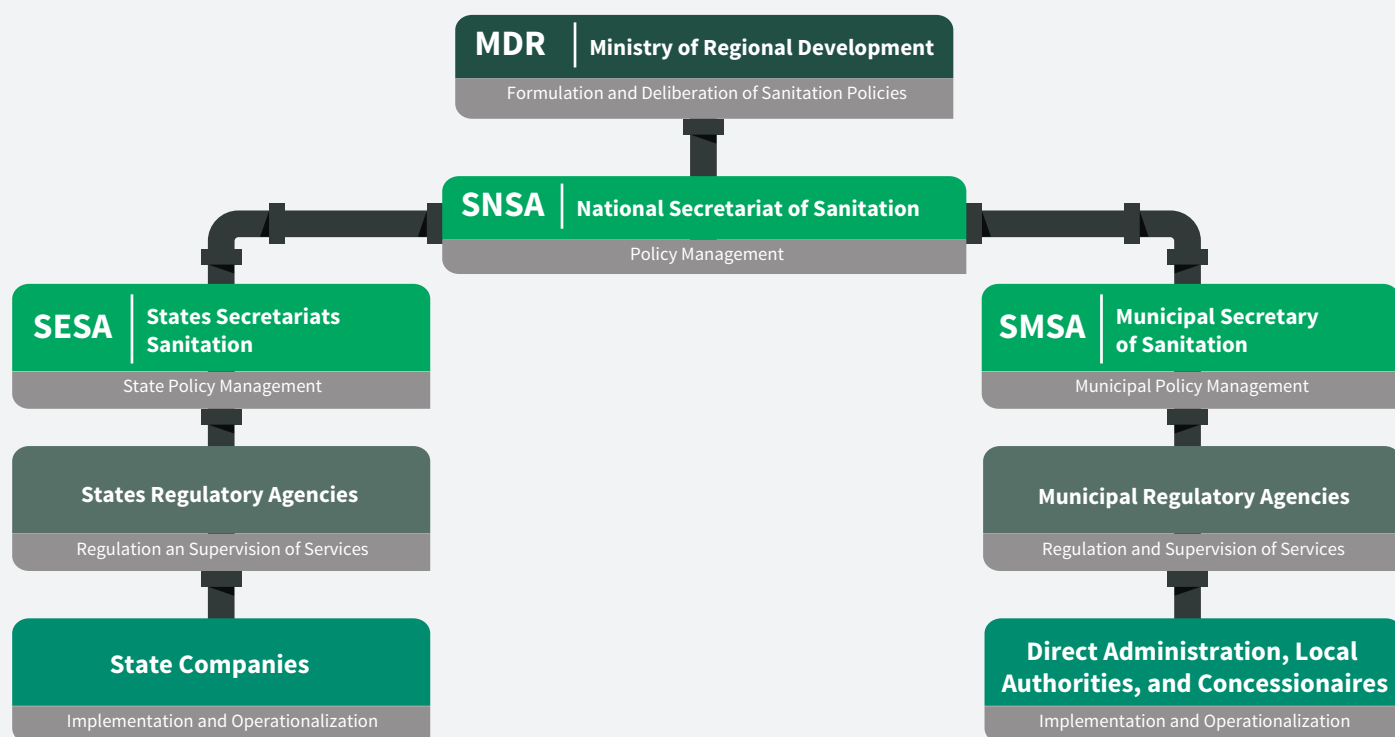
<sup>75</sup> [SNIS, 2017](#).

## 12.5. INSTITUTIONAL STRUCTURE

The Federal Constitution<sup>76</sup> of 1988 established a model guided by the theory of local interest, which advocates that public services should be planned and provided by the public administration that is closest to the demand. Thus, the sector has an institutional design that involves the three federative spheres. There is a complex interaction between powers, but each entity has its own role. It is up to the Federal Government to establish general guidelines, formulate and support universalization programs at a national level.

States have the responsibility for improving sanitation conditions and defining metropolitan regions, urban agglomerations and micro-regions, through complementary laws. These regions are groupings of neighboring municipalities with a view to planning and developing common interests. It is also the States responsibility to inspect state companies.

Municipalities are responsible for formulating sanitation plans, organizing and providing - directly or under concession - public services of local interest. It is also a municipal responsibility to organize, regulate and supervise the services, either directly or by delegation.



76 [Articles 21, 23, 25 and 30 \(items I and V\).](#)



For more information on this subject, please access:

[Regional Development Ministry – MDR](#)

The purpose of the MDR is to promote the universalization of sanitation services, as well as the suitable solid waste and stormwater management, with the consequent flood control.

[National Water Agency – ANA](#)

ANA is the regulatory agency dedicated to enforcing the objectives and guidelines of the Brazilian Water Law. It regulates the access to and use of water resources under the Federal Government's domain. In addition, it issues and supervises compliance with regulations, especially grants, and is also responsible for monitoring the safety of dams. Additionally, in the process of approval, ANA is responsible for issuing national reference standards for the regulation of the provision of public sanitation services.

### **State Regulatory Agencies**

In parallel with the federal regulatory agencies, the state regulatory agencies are in charge of monitoring compliance with the goals established by the municipal plans, demanding from service providers compliance with the provisions established therein, conducting investment plans and services expansion.

The National Sanitation Policy<sup>77</sup> has established that responsibility holders may delegate the service regulation to any regulatory entity in the respective state. In case of joint management or regionalized service provision, the holders may adopt the same economic, social and technical regulation criteria throughout the services coverage area.

There are 48 water and sewage regulatory agencies: 22 at the state level, 23 local and 3 consortia with municipalities<sup>78</sup>.

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<sup>77</sup> [Law 11.445/07](#)

<sup>78</sup> [ABAR, 2017](#)

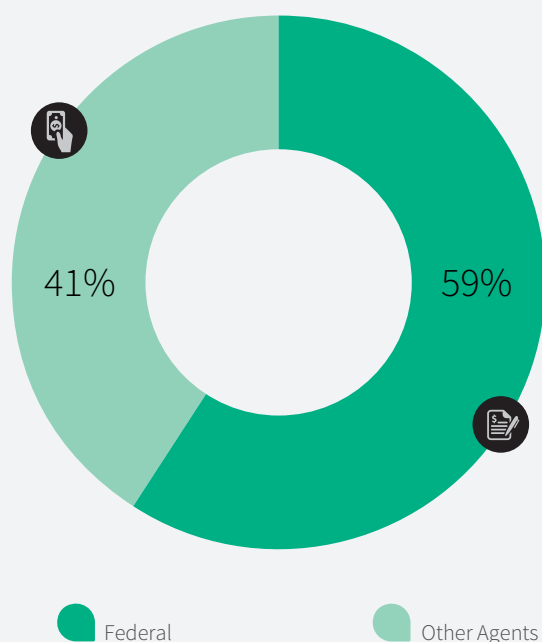
## 12.6. PLANNING

### Brazilian Sanitation Plan (PLANSAB)

The PLANSAB<sup>79</sup>, launched in 2013, establishes the plan for universalization of sanitation services covering a period of 20 years (2014 to 2033). The plan must be evaluated annually and revised every four years.

In order to universalize sanitation services in the country, investments of approximately R\$ 508 billion would be required between 2014 and 2033 - Federal Agents (59%); other agents (41%), including state and municipal governments, public and private providers, and international organizations, among others.

### Investment Sources

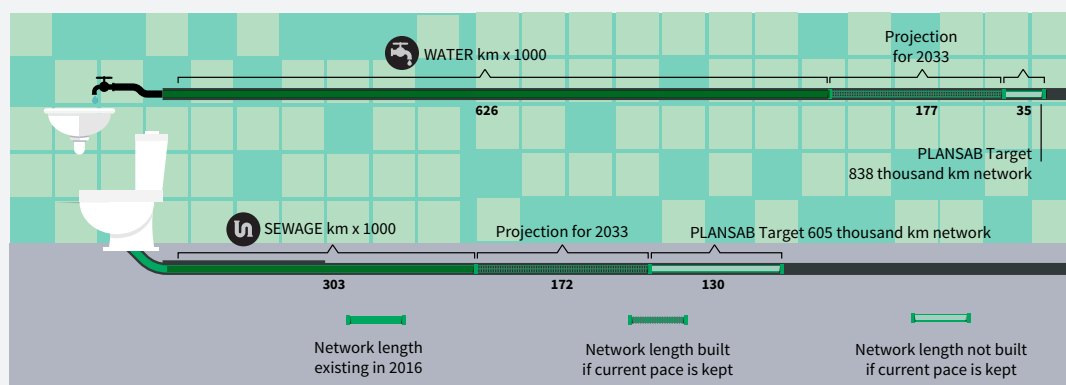


Source: [Plansab](#)

The resources for the universalization of water and sewage collection alone are about R\$ 304 billion. Considering the current stock and the average depreciation of water supply and sewage system assets, an additional investment of R\$ 6 billion per year would be necessary just to replenish the network.

<sup>79</sup> [Law 11.445/2007, art. 19.](#)

## Water distribution and sewage collection NETWORK LENGTH vs. PLANSAB Target (km x 1000)

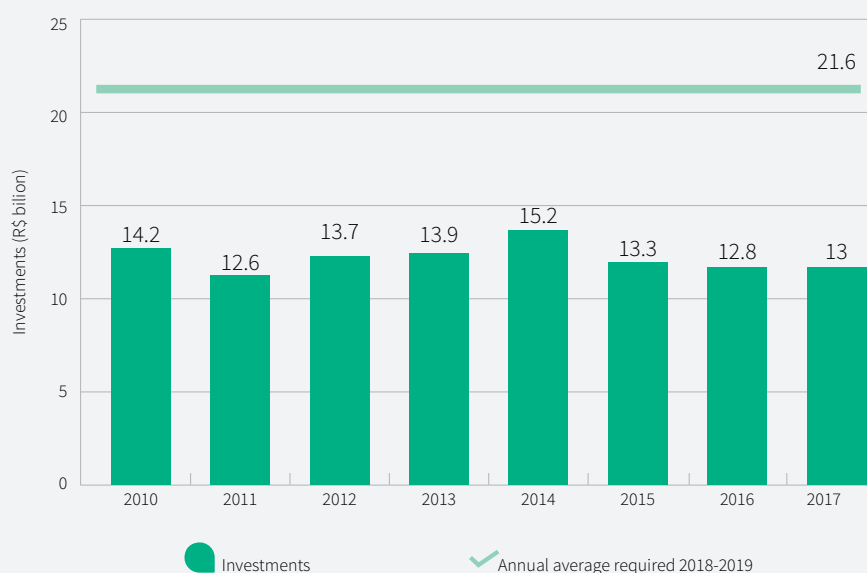


Source: [Abcon](#)

Contemplating the investments since the inception of the Plan - an average of R\$ 10 billion/year - the amount already reaches R\$ 420 billion<sup>80</sup>, updated by inflation.

In other words, R\$ 20 billion per year must be invested to secure the universalization of services by 2033 - not taking into account the investments to increase water security and upgrade the network.

## Investments in Basic Sanitation



Source: [SNIS](#)

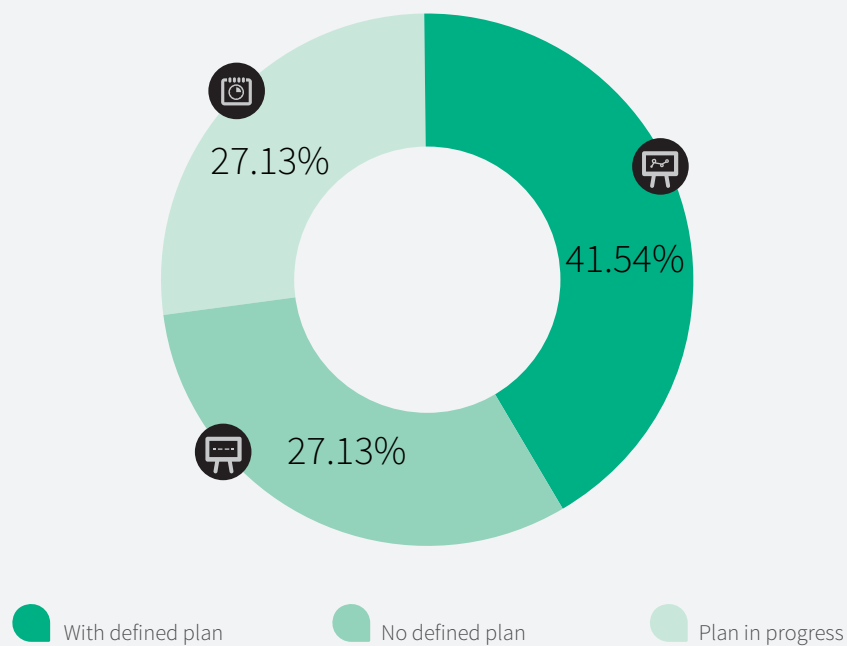
If nothing changes, with the current level of investment, universalization will only be achieved by 2059.

80 [KPMG, 2018.](#)

## 12.7. MUNICIPAL SANITATION PLANS

According to the law<sup>81</sup>, Municipal Plans are mandatory and must provide diagnoses to reach universalization. These plans will be a management tool for municipalities, which must prepare them by December 2019<sup>82</sup>. Those that fail to deliver might not receive federal resources to cover their needs<sup>83</sup>.

**Chart: Municipalities with Municipal Sanitation Plan**



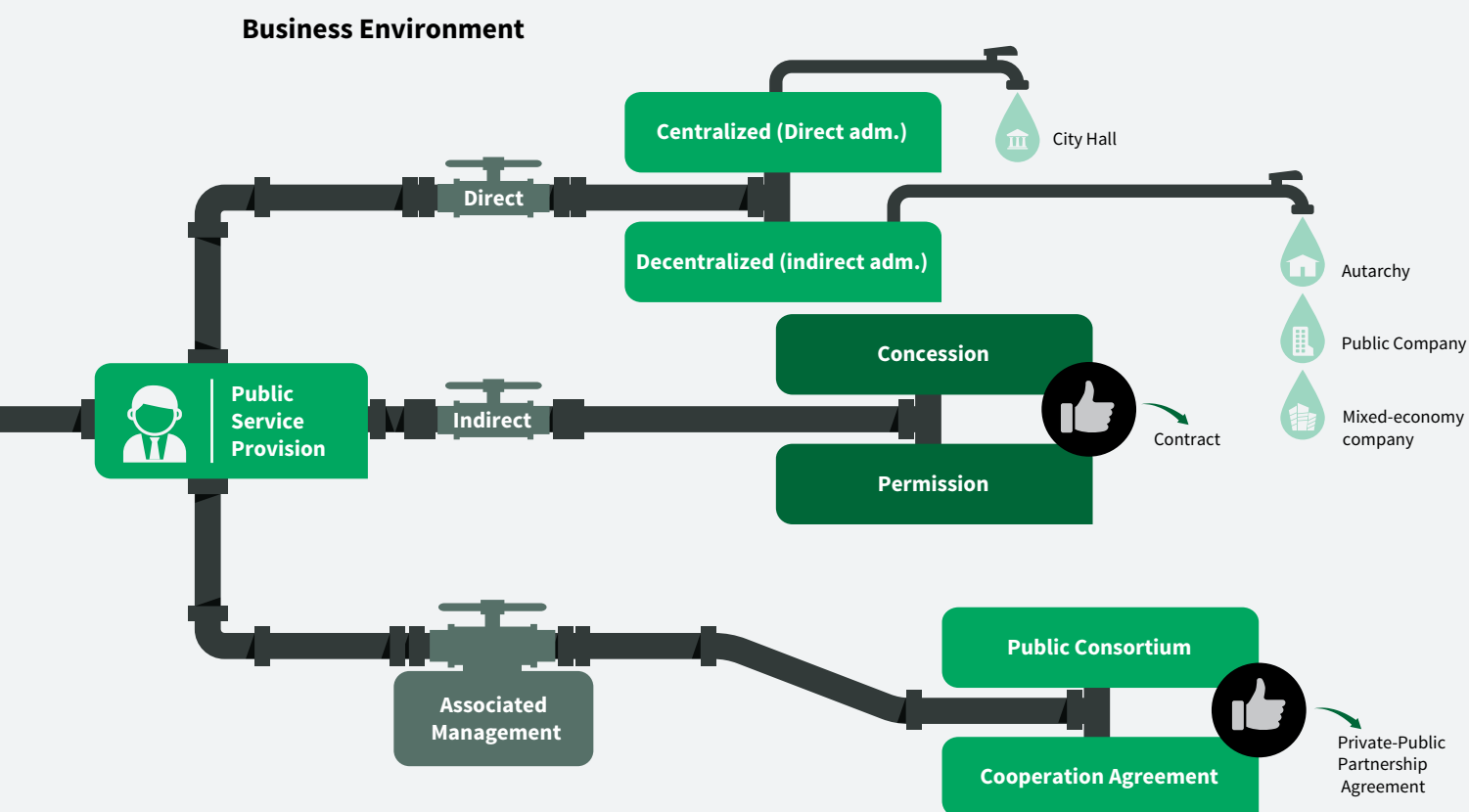
Source: [IBGE](#)

81 [Law 11,445/2007](#)

82 [Decree 9,254/2017](#)

83 [Decree No. 7,217/2010](#)

## 12.8. BUSINESS ENVIRONMENT



### 12.8.1. MUNICIPAL STATE-OWNED ENTERPRISES

The direct service provision involves two types of management: direct<sup>84</sup> or indirect<sup>85</sup> - which is usually conducted by local authorities. Municipal companies develop local services, and sometimes for a small region surrounding the main location. Currently, these types of companies serve 27% of Brazilian municipalities<sup>86</sup>.

84 Consisting of entities directly linked to the Federal Government. They receive a transfer of public money from taxes collected by the Federal Government - ministries, secretariats, coordinators and departments. They do not have their own legal personality, (CNPJ - National Registry of Legal Entities).

85 Consisting of decentralized entities with their own legal personality (CNPJ). They are: Autarchies, public foundations, public companies and mixed economy companies.

86 [Aesbe](#)

The sector regulation requires drafting a contract (concession or private-public partnership agreement) when the services are provided either indirectly or by joint management. Many municipalities delegate services to state companies; others grant or create Public-Private Partnerships<sup>87</sup>.

### **12.8.2. STATE-OWNED ENTERPRISES**

Over the years, states have created public enterprises or mixed-capital companies called State Sanitation Companies - CESB - to provide services to municipalities based on agreements. Currently, there are 27 CESBs responsible for serving more than 4,000 municipalities. The operation of state-owned companies covers 67% of the population<sup>88</sup>.

The Sanitation Company of the State of São Paulo - Sabesp, is an example of CESB and the largest sanitation company in Latin America. It provides water distribution and sanitary sewage services to 371 municipalities.

In most metropolitan regions, state-owned companies perform the services, and the service provider covers two or more municipalities.

### **12.8.3. JOINT MANAGEMENT**

Joint management or regionalized service providers deliver access to quality services, at reasonable prices, to small and low-income municipalities through economies of scale and cross subsidy. In this case, city halls can sign contracts and renew them automatically without the need to open a public bidding process<sup>89</sup>.

The providers must comply with the municipal sanitation plan and the contracts can be executed by: i) Public Consortium, when two or more entities of the Federation are concerned. In addition to providing services, they may perform regulatory and supervisory activities; or ii) Cooperation Agreements, a legal instrument used by entities of the federation or with private entities, for a cooperative or partnership link to a common interest.

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87 Law 11.445/2007 Art. 8 “The holders of public basic sanitation services may delegate the organization, regulation, supervision and provision of these services

88 [Aesbe](#)

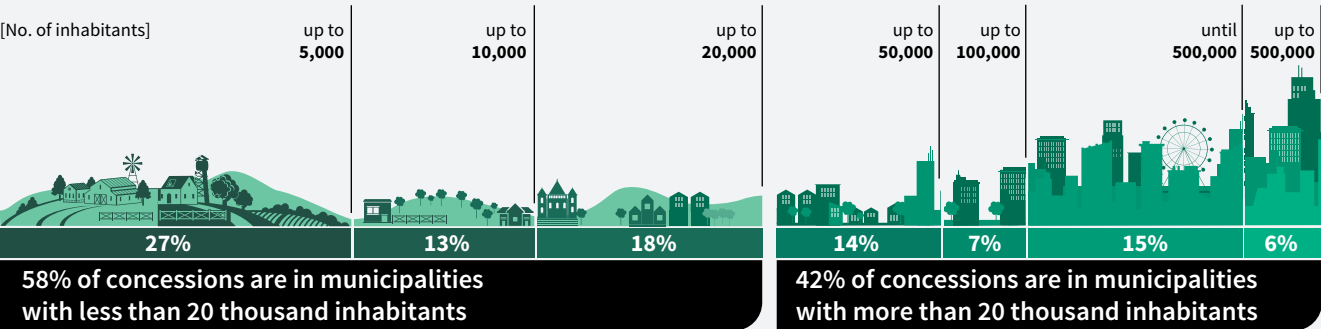
89 Art. 241 of the Federal Constitution and Law 11,107/2005 establishes, in cases of association, the obligations that must be fulfilled and ruled by a Private-Public Partnership Agreement, as a validity condition.

### 12.8.4. PRIVATE COMPANIES

In recent years, the sector has observed a consistent growth in concession contracts - promoted directly by the municipalities or by Public-Private Partnerships.

Currently, only 322 municipalities or 6% of the total are served by private companies<sup>90</sup>. Despite the small market share, the private sector already accounts for 20% of the investments. There are 266 contracts of different modalities - R\$ 37.6 billion in committed investments and R\$ 13.3 billion have already been invested.

#### Municipalities with a Share of the Private Segment\*

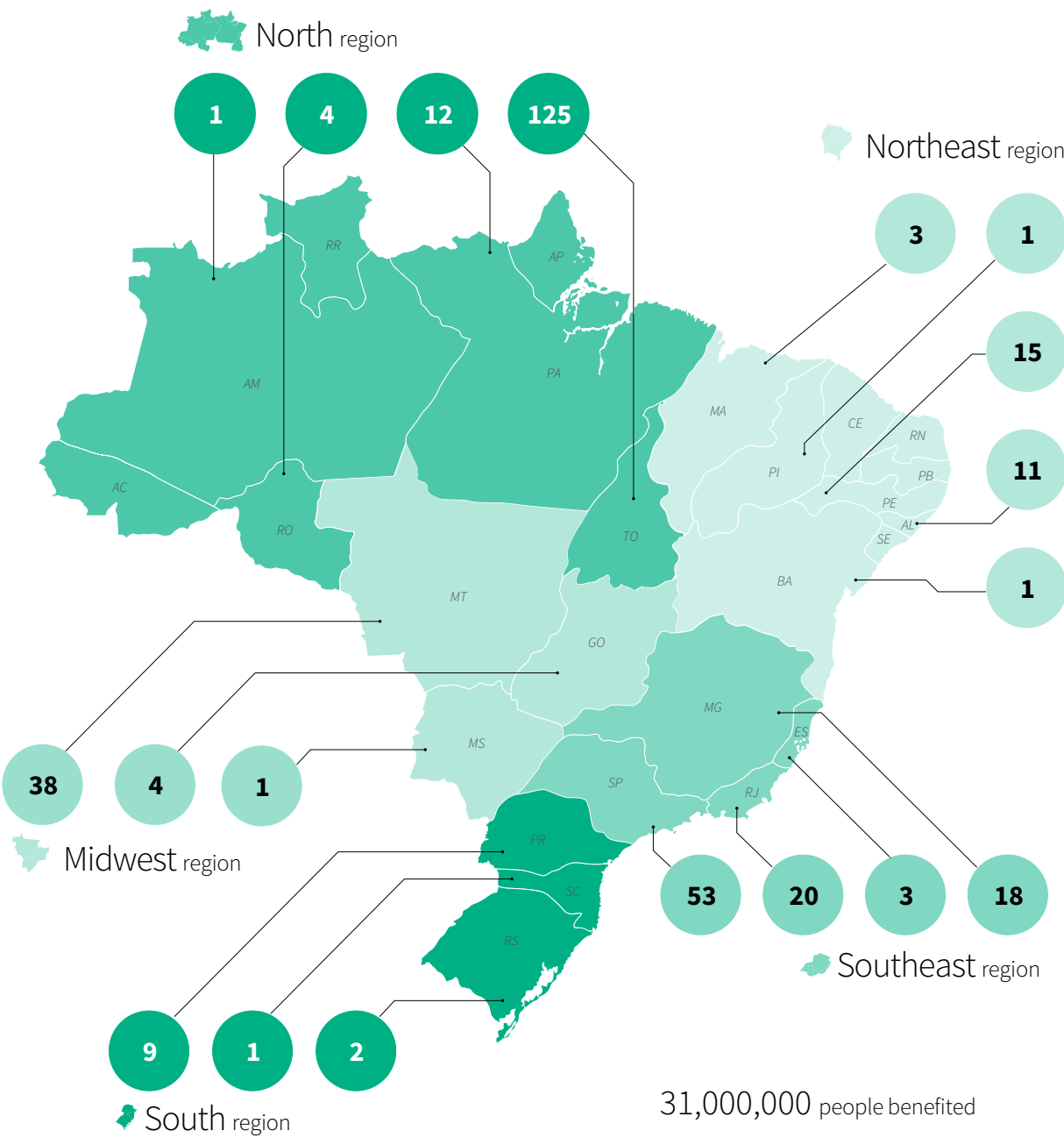


\*The aggregated population was considered for agreements involving two or more municipalities.

Source: [Abcon](#)

90 [Abcon](#)

Presence of Private Initiative in Municipalities

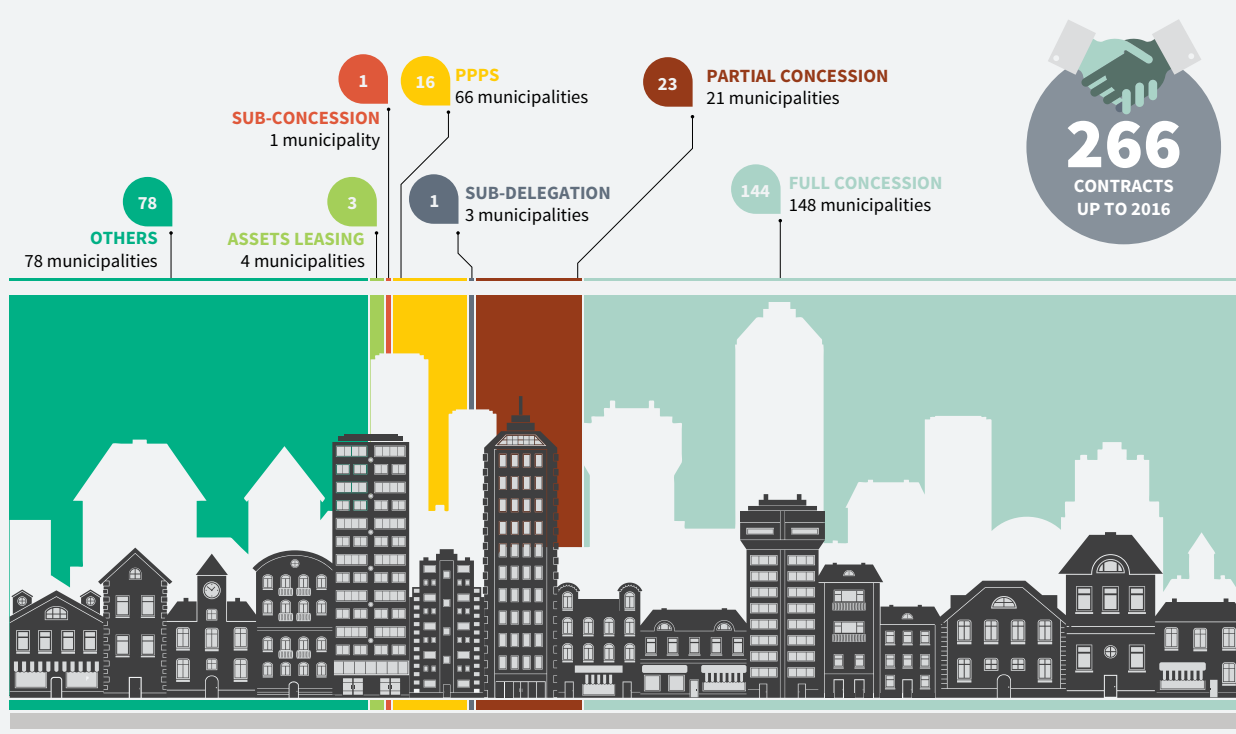


Source: [Abcon](#)



## 12.9. CONTRACT MODELS

### Contract Modalities with the Private Segment



Source: [Abcon](#)

## 12.10. BUSINESS OPPORTUNITIES

The universalization of sanitation services is a fundamental issue and there are uncountable opportunities in the sector. Given the scarcity of funds of some municipalities, and the need for investments of around R\$ 20 billion per year, the participation of private capital is crucial. With management capacity and access to modern technologies, private initiative must be responsible for reducing operating costs and gaining efficiency. Private investment has the potential to meet the needs of 30% of municipalities over the ten years.

More recently, public entities have engaged in several studies on the growth and the improvement of the sanitation, so new PPPs are certain to move materialize.

Investing in **technical training** will help Brazil take a qualitative and innovative leap in its service levels, since many municipalities, especially small ones, have difficulty finding qualified professionals, good projects of urban planning (master plans, municipal plans) and engineering, or even justifying their funding requests to financial institutions.

**It is essential to promote efficiency gains in the sector.**

Most sanitation operators suffer from high operational inefficiency. The sector would have much to gain by investing in **operational efficiency**, including reducing water losses, saving electricity and chemicals for treating and pumping water

Investing in **desalination plants** is another option for coastal municipalities, as well as reuse water, which can be used for irrigation or served without risks to the population.

Investments in capturing methane from landfills and sanitary sewage can generate electrical energy and be used in vehicles as a substitute for gasoline.

Also in the solid waste sector, the use of waste to energy is already a very common process in countries such as Japan and France.

The sixth. Sustainable Development Goal of the United Nations is to ensure availability and sustainable management of water and sanitation for all by 2030. The use of artificial intelligence may help the country to achieve its goals in a timely manner.

Examples of technology are sensors used throughout the distribution network to collect relevant information on the system through **Big Data**. Smart tubes provide real-time risk assessments to prevent leakage before they actually occur. **Smart water meters** calculate the water flow in real time, and should it be above normal, it warns the company and the customer.

**Smart hydrometers** are another example used to digitalize consumption information without the need for a technician.

All these structuring measures are in progress in the country at different stages of implementation. The expectation for the coming years is positive and everything points to the consolidation of a more dynamic market, with the entry of new agents and pricing and tariff transparency.

## 12.11. LEGAL AND REGULATORY FRAMEWORK

[Law No. 9,433/1997](#), the “Brazilian Water Law” created the National Water Resources Policy and the National System for Water Resources Management.

[Law No. 10,257/2001](#), known as the “City Statute” established general guidelines for urban policy, conditioning property rights, and choosing legal and administrative institutes to facilitate state action on urban planning.

[Law No. 11,445/2007](#), established the guidelines for the National Basic Sanitation Policy. It establishes the jurisdiction of the federal government, states and prefectures in connection with sanitation services, as well as regulates the participation of private companies in basic sanitation.

[Law No. 12,305/2010](#), created the National Policy on Waste Management. The Law established the Reverse Logistics, with the responsibility shared between the waste generators, and also set goals for the elimination of dumps and provided planning instruments for the elaboration of Solid Waste Management Plans.





# 13. MINING

Currently, mining is an economic activity whose objective is the extraction of mineral substances from deposits or mineral masses. As an industrial activity, mining is indispensable for maintaining the standard of living and advancement of modern societies today.

Mining is an activity required to obtain material that cannot be grown through agricultural processes, or feasibly created in a laboratory or factory. In a broader sense, mining includes extraction of any non-renewable resource such as water, petroleum or natural gas.

Metals, coal, oil shale, gemstones, limestone, chalk, dimension stone, rock salt, potash, gravel and clay are ores recovered by mining.

In Brazil, mining is one of the main economic activities, due to its continental dimension and geologically privileged, besides having a great availability of resources.

## 13.1. MINING INDUSTRY OUTLOOK

- The metals market is expected to remain stable in 2019, given that the market expectation is maintenance in the supply and demand balance of each of the commodities
- World iron ore production has been growing yearly, driven by rising exports. Following the global trend, the Brazilian production of iron ore, the main mining product extracted in the country, has also been growing annually
- Data released by U.S. and Chinese economies, the world's largest importer of iron ore, accounting for more than half of all iron ore imports from the planet, signal a slowdown in the global economy
- Increase in iron ore inventory in China, indicates a refueling movement with a threat of a decrease in supply due to the adequacy of Vale's production
- Some factors such as the Brumadinho disaster, Vale's decision to reduce iron ore production by 10% and the threat of a slowdown in the global economy has been pushing iron ore prices
- Recent years results from the world's leading mining companies have shown consistent results in terms of market performance and operational improvements
- The main mining companies have an integrated logistics infrastructure that allows an improvement of the competitiveness and optimization of the margins, as is the case of the Brazilian company Vale

- Mining companies to resume investment strategy in 2019, focusing on portfolio diversification
- Expectation of industry growth and appetite for financing new projects should be the main drivers for new emissions in 2019

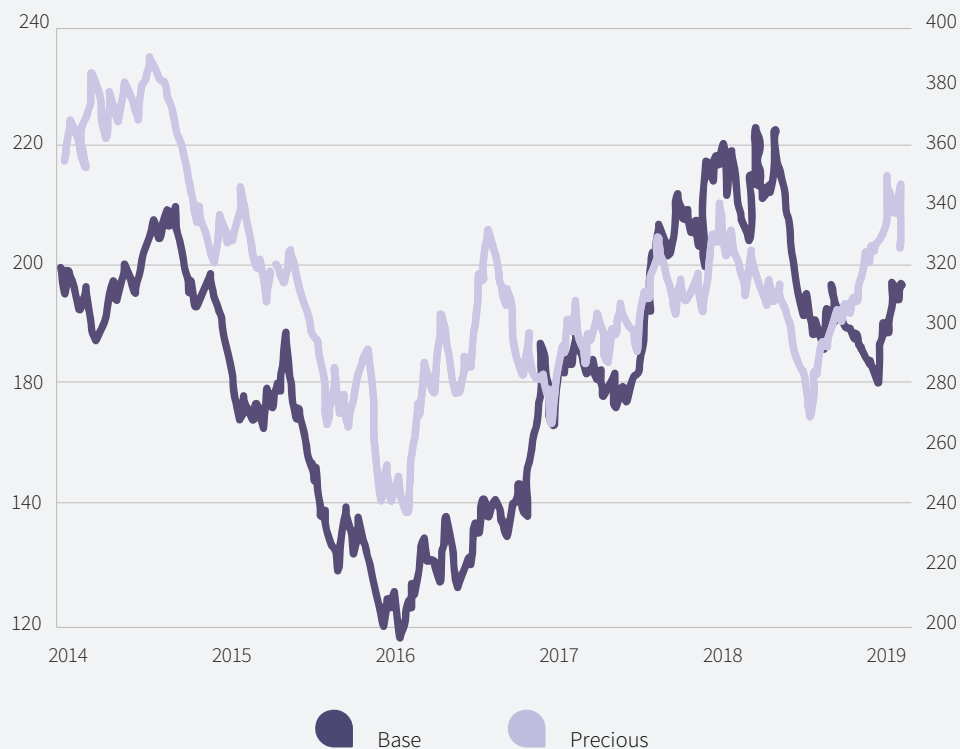
## 13.2. METAL PRICE

The metals market is expected to remain stable in 2019, given that the market expectation is maintenance in the supply and demand balance of each of the commodities.

For base metals market, some key factors may negatively influence a good performance. The deceleration of the global economy, such as China the main importer can decrease demand for base metals. Besides that, trade tensions between countries, with economic sanctions can influenced the metals market performance.

Positive outlook for precious metals market in 2019 with expectation of dollar weakening, making people migrate do precious metals. Central banks will continue to be a significant source of gold demand, according to the World Gold Council, central bank demand for gold grew 22% in the third quarter of 2018 comparing to the previous year.

### Bloomberg Base and Precious Metals Price Commodity Index



Source: Bloomberg

## 13.3. IRON ORE

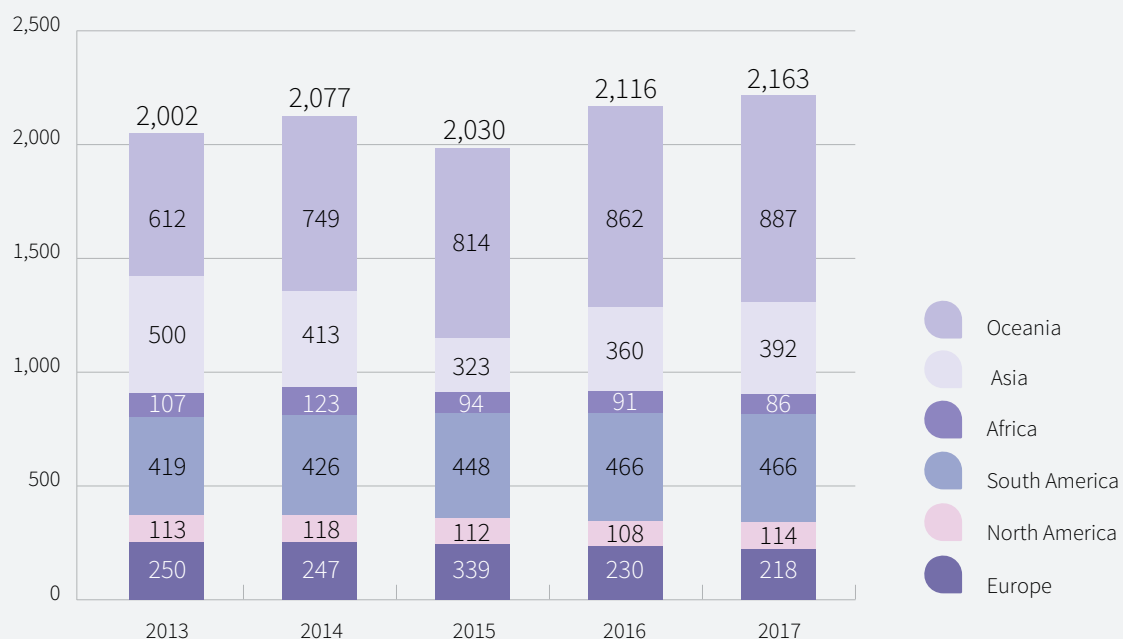
Iron ores are rocks from which metallic iron can be obtained in an economically feasible manner. Iron is generally found in the form of oxides, such as magnetite and hematite, or as a carbonate, siderite.

Ores that contains high quantities of hematite and magnetite (over than 60% iron) are known as “natural ore”, meaning that they can be fed directly into iron-making blast furnaces. Iron ore is the raw material used to make pig iron, the main raw material to make steel.

### 13.3.1. PRODUCTION

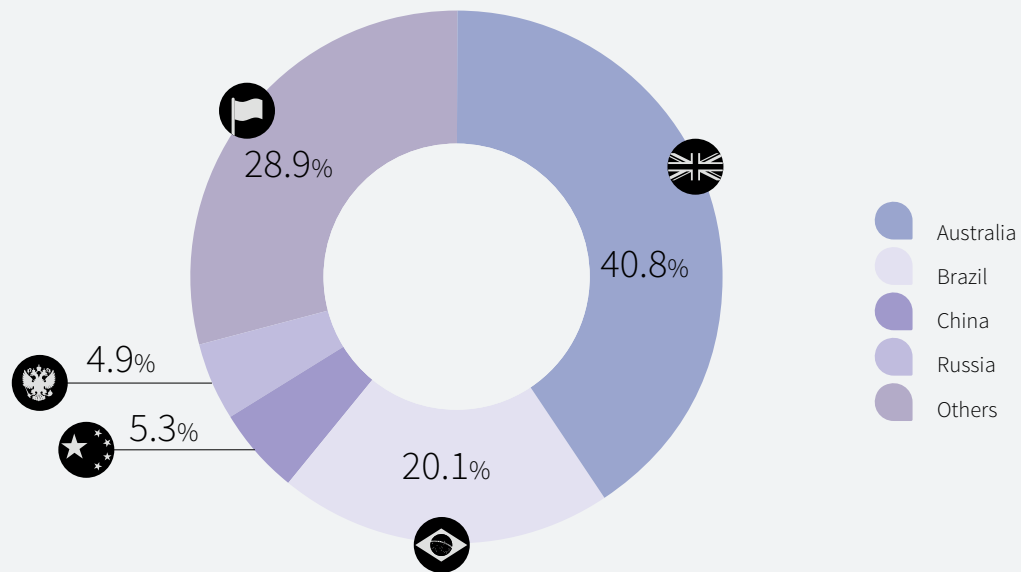
Global iron ore production has grown over the last 5 years at an average rate of 2% per year with growing demand from China, main importer of ore. The global production is mainly concentrated in Brazil and Australia, accounting for more than 60% of total production and more than 47% of world's reserve in 2017.

**World Iron Ore Production (Million Ton)**



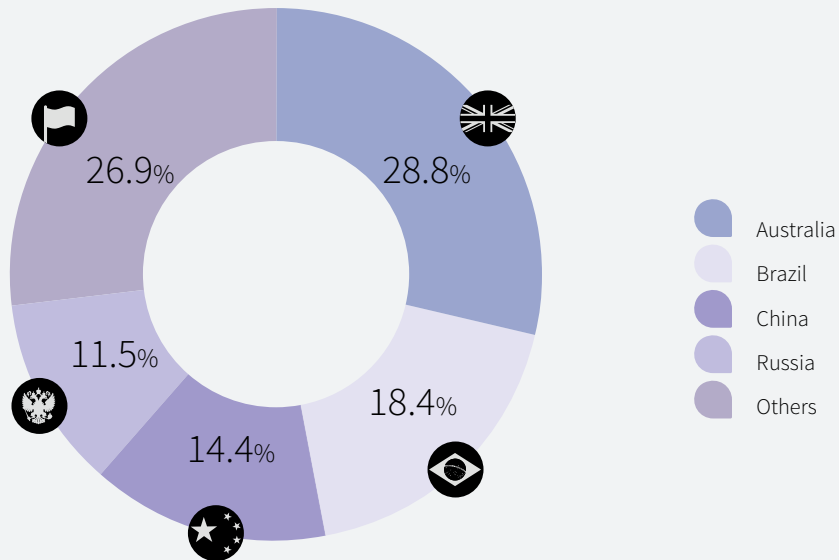
Source: World Steel

### Participation of Major Iron Ore Producer Countries



Source: World Steel

### Main Iron Ore Reserves in the World



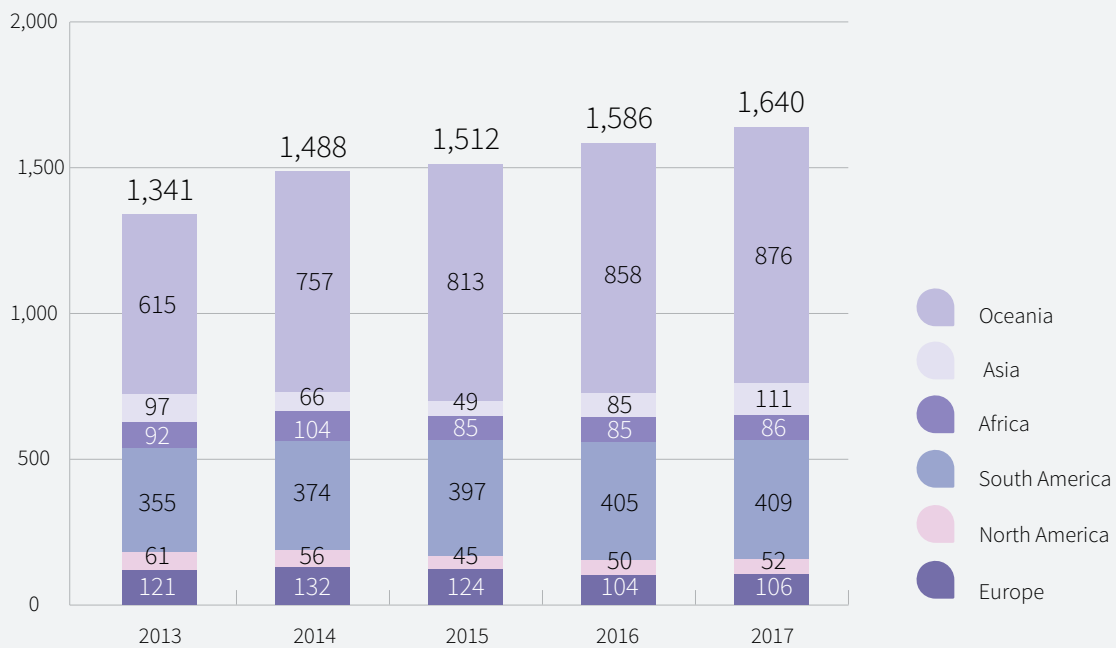
Source: World Steel



### 13.3.2. EXPORTS

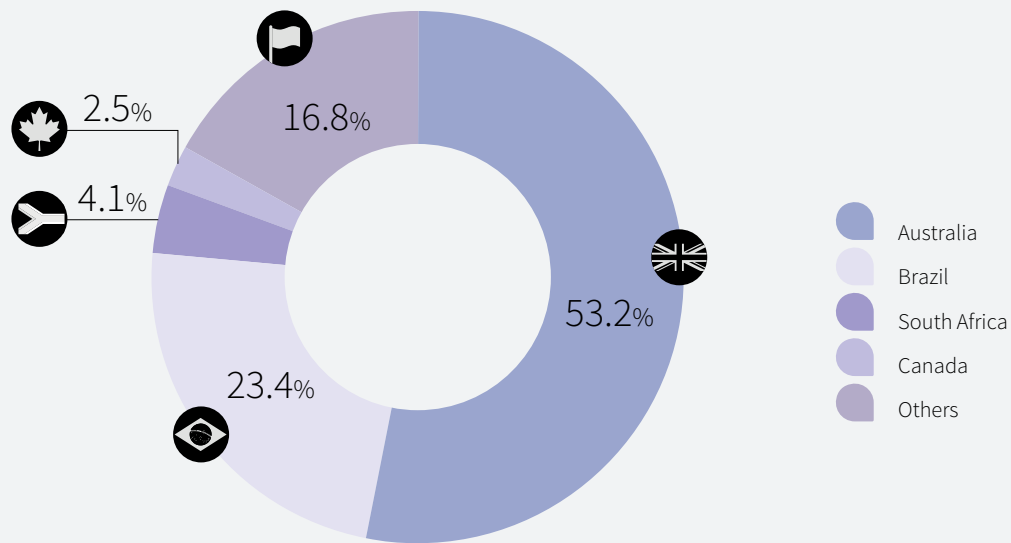
The growing demand by China for iron ore has boosted exports over the last years with average growth of 5% per year in the period between 2013 and 2017. Brazil and Australia, the largest producers, are also the two largest exporters of iron ore accounting for more than 75% of worlds exports.

**World Iron Ore Exports (Million Ton)**



Source: World Steel

### Participation of Major Exporting Countries

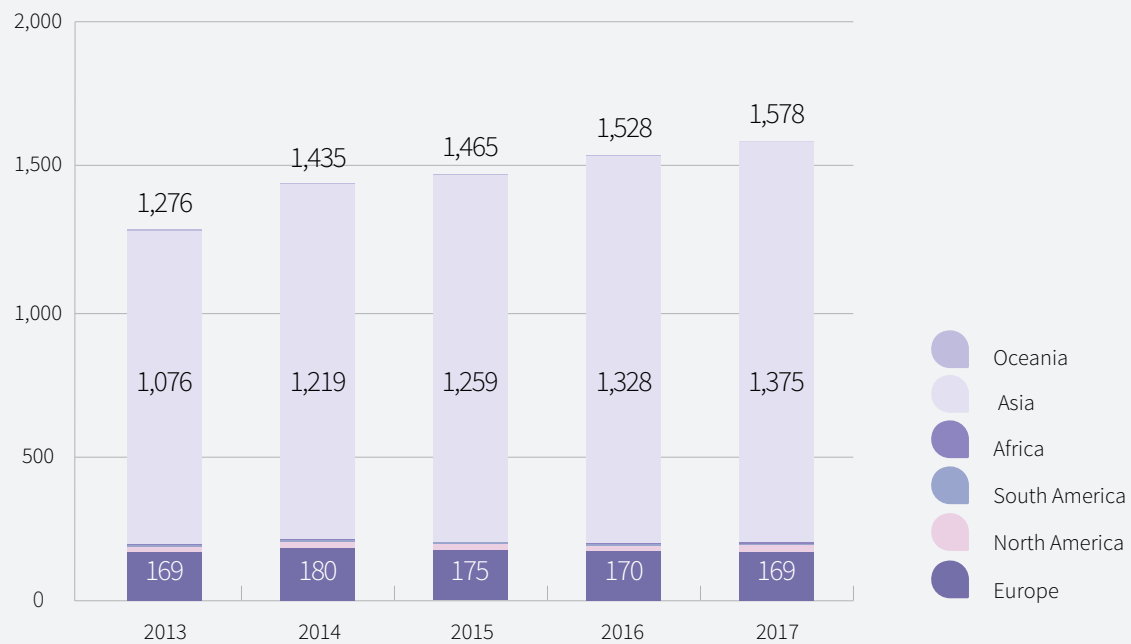


Source: World Steel

### 13.3.3. IMPORTS

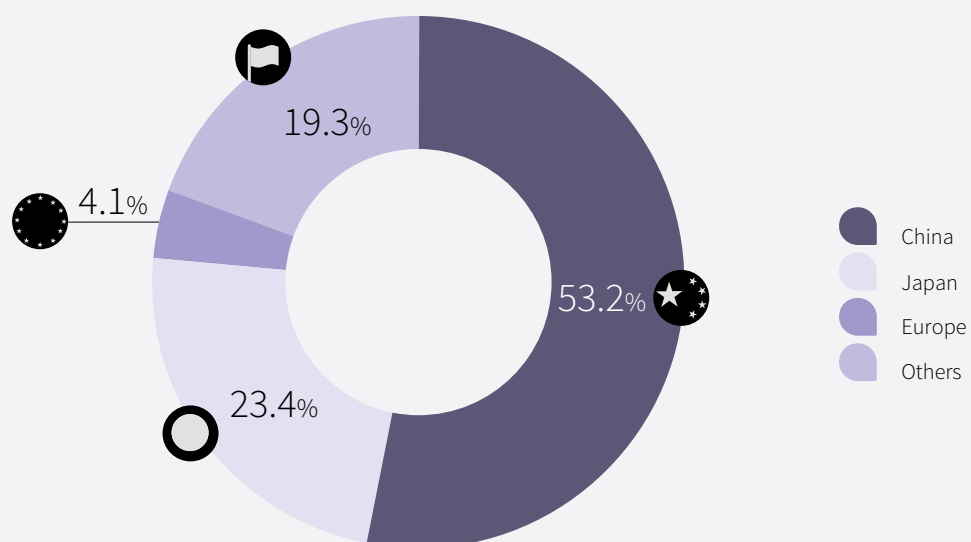
Imports of iron ore has grown over the last 5 years at an average rate of 6% per year, following the growth of steel production, mainly from China and Japan, the two world's largest importers of iron ore and producer of crude steel, accounting for more than 76% and 55%, respectively.

## World Iron Ore Imports (Million Ton)



Source: World Steel

## Participation of Major Importing Countries



Source: World Steel

### 13.3.4. PRICE

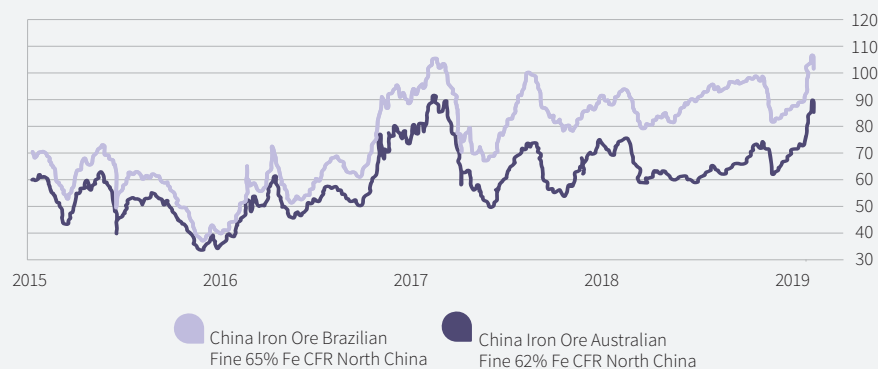
Iron ore prices reach a higher level since 2015, with a 22% increase, reflecting the stabilization of supply and demand, after adjusting for expectations of Chinese demand.

Economic effects of the Brumadinho's dam disruption on January 25 already appear in the global iron ore prices since the accident with China Iron Ore Australian Fines 62% Fe CFR North China 15.4% price increase and China Iron Ore Brazilian Fines 65% Fe CFR North China 12.8% price increase.

Vale's decision to reduce annual iron ore production by 10%, is expected to put pressure on the global commodity market in 2019.

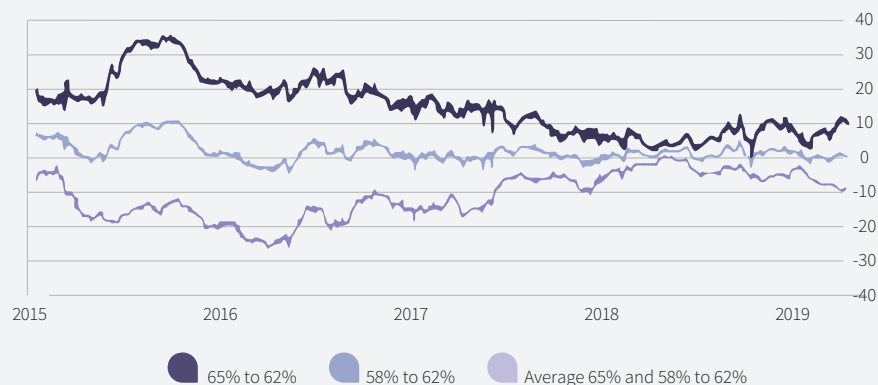
Fines with a lower grade became more popular when mill margins narrowed down focusing in cost control.

#### China Iron Ore Price Index in US\$/dmt



Source: Bloomberg

#### Low Grade Vs. High Grade Fines Spread in US\$/dmt



Source: Bloomberg

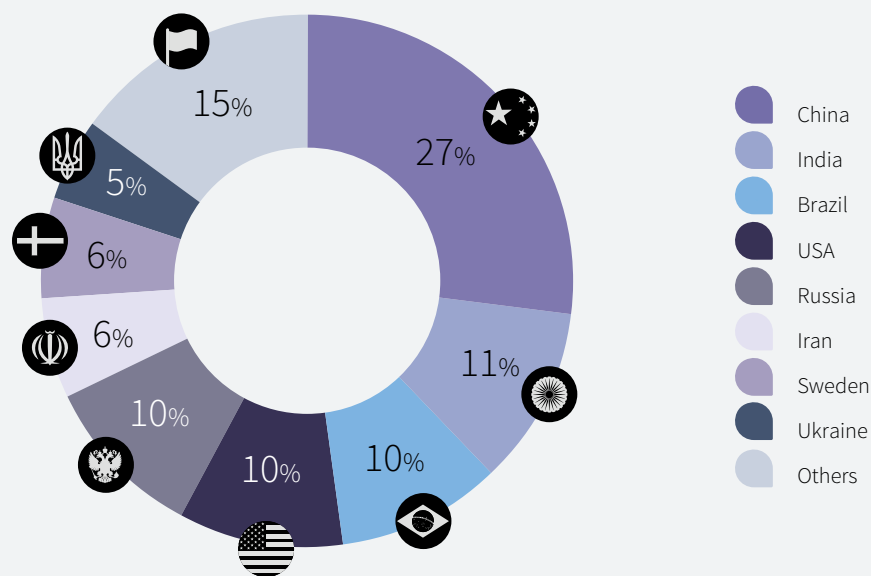
# 13.4. PELLET

In mining, pellets are small balls of iron that are used in the production of steel, made with technology that uses the powder generated during the ore extraction process, once considered waste.

Pallets are used in the production of steel with a series of applications such as, bridges, vehicles household appliance and much more.

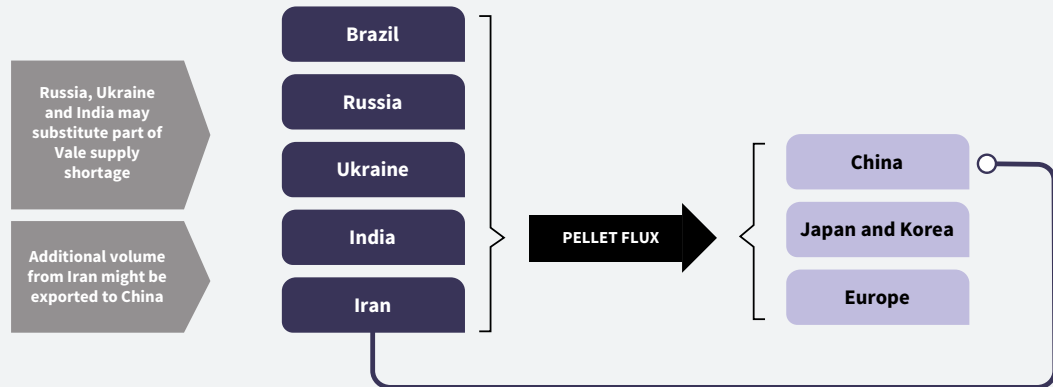
Brazil is one the main producers of pellets, with 46 million of Mt and representing 10.3% of world's output of pellet. The recent Brumadinho's accident in the beginning of the year, may bring changes to the global pellet supply chain.

Pellet Output by Country (Million Mt)



Source: S&P Global

## Pellet Exporters and Importers



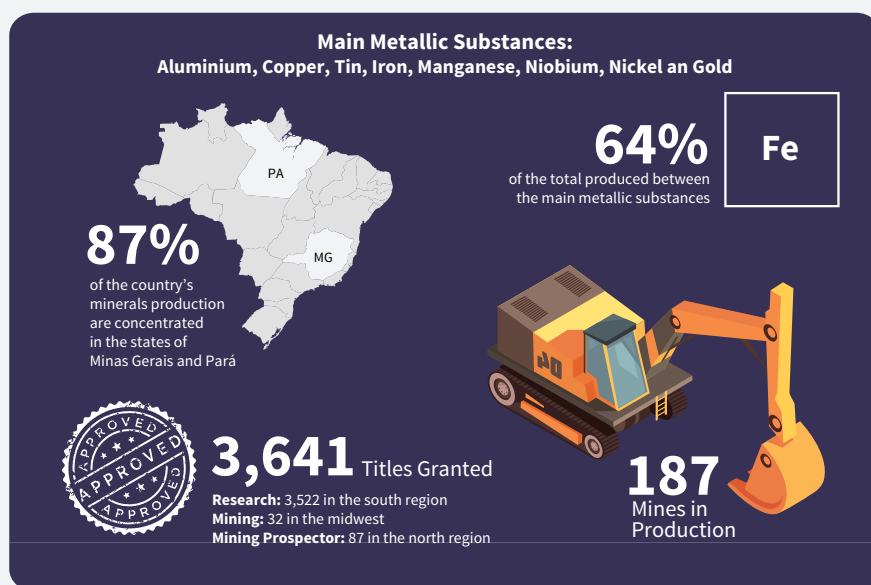
Source: S&P Global

## 13.5. MINING IN BRAZIL

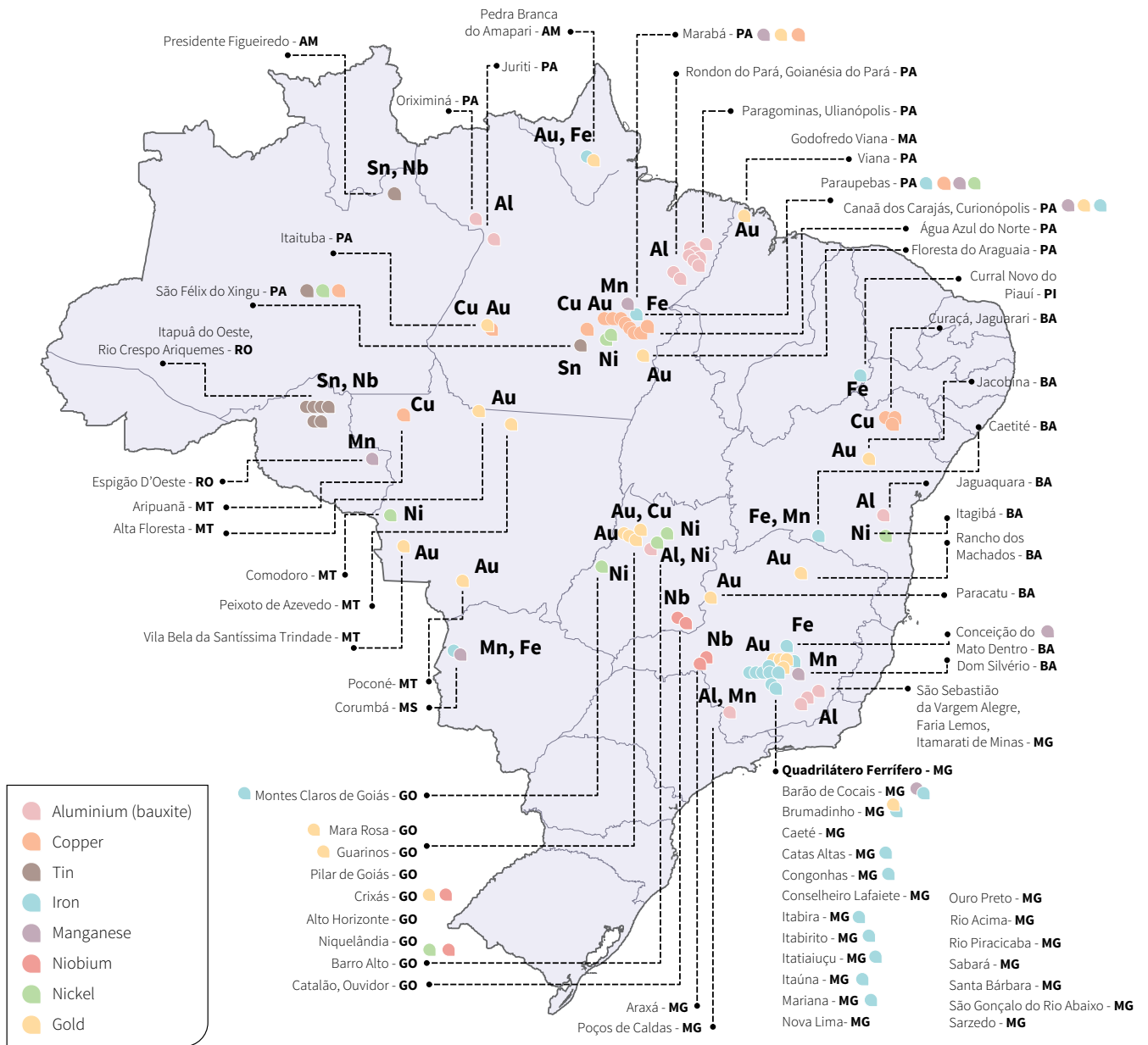
Mining is one of the main economic activities in Brazil, accounting for about 4% of the Gross Domestic Product (GDP) and 25% of the Brazilian trade balance in 2017. The sector was responsible for generating 180 thousand direct jobs and 2.2 million indirect jobs in the country.

The states of Minas Gerais and Pará concentrated most of the mineral production in the country with about 87% of the total produced in 2016, with iron ore being the main metallic substance extracted, representing 64% of the total.

### Mining highlights in Brazil



## Main Mineral Reserves and Metallic Substances in Brazil



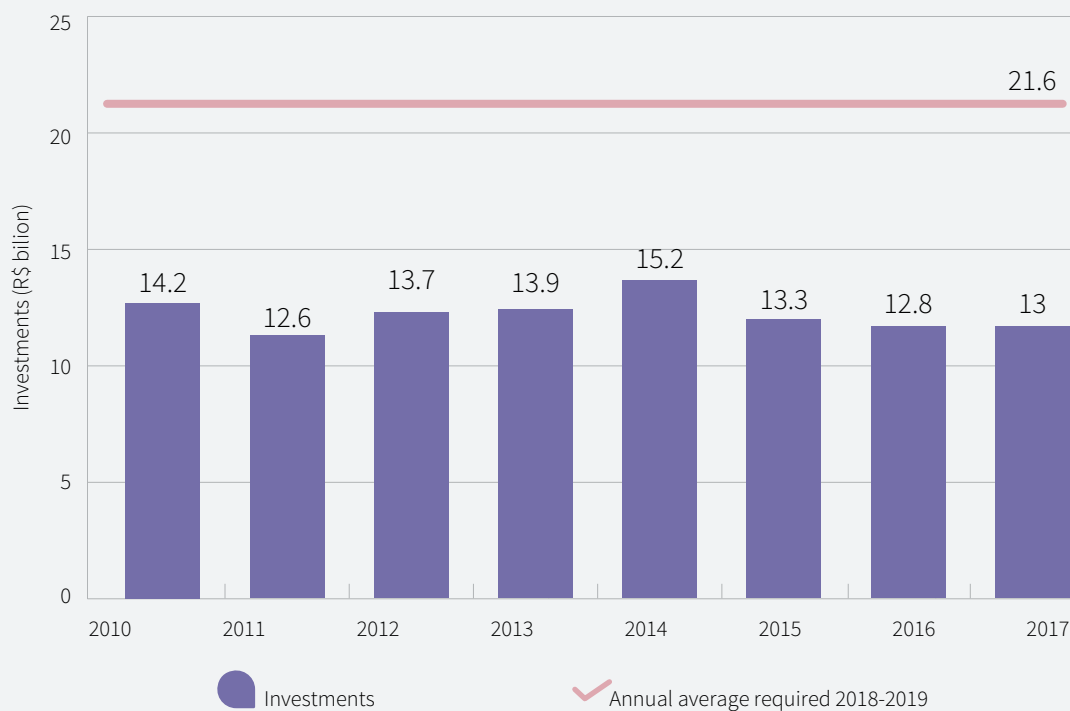
Source: ANM

### 13.5.1. BRAZIL'S PRODUCTION AND DESTINATION OF IRON ORE

Most of Brazilian's production of iron ore is intended to export, about 88%, mainly to China and Europe representing 58% and 14%, respectively.

Production and exports of Brazilian iron ore has grown at a rate of 3% and 4%, respectively, between 2013 and 2017, following the growth of Chinese iron ore demand during this period, the main destination of the Brazilian ore.

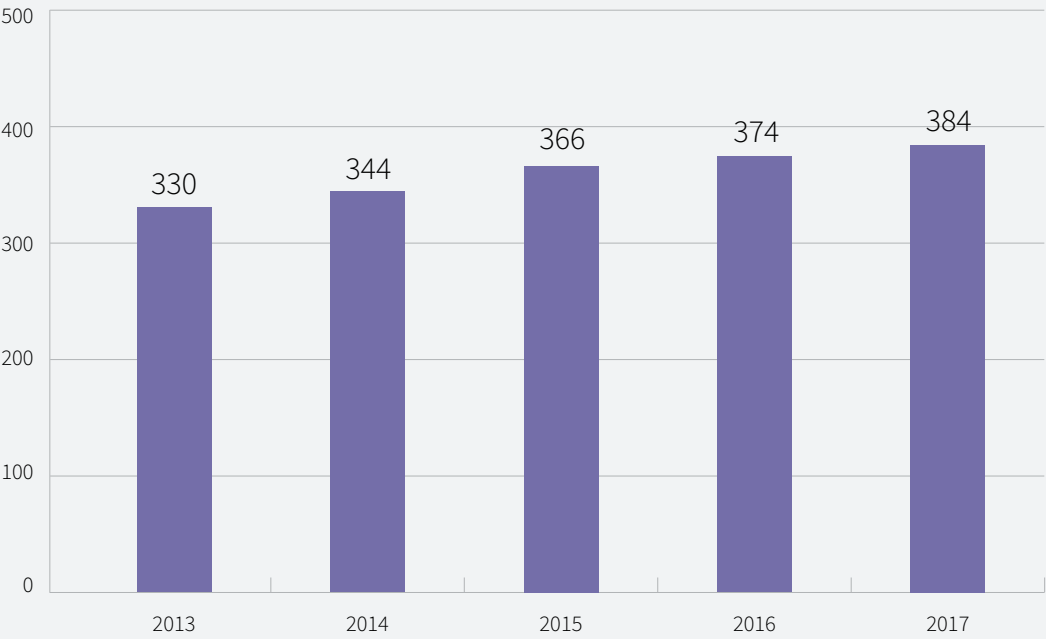
#### Brazil's Iron Ore Production (Million Ton)



Source: World Steel

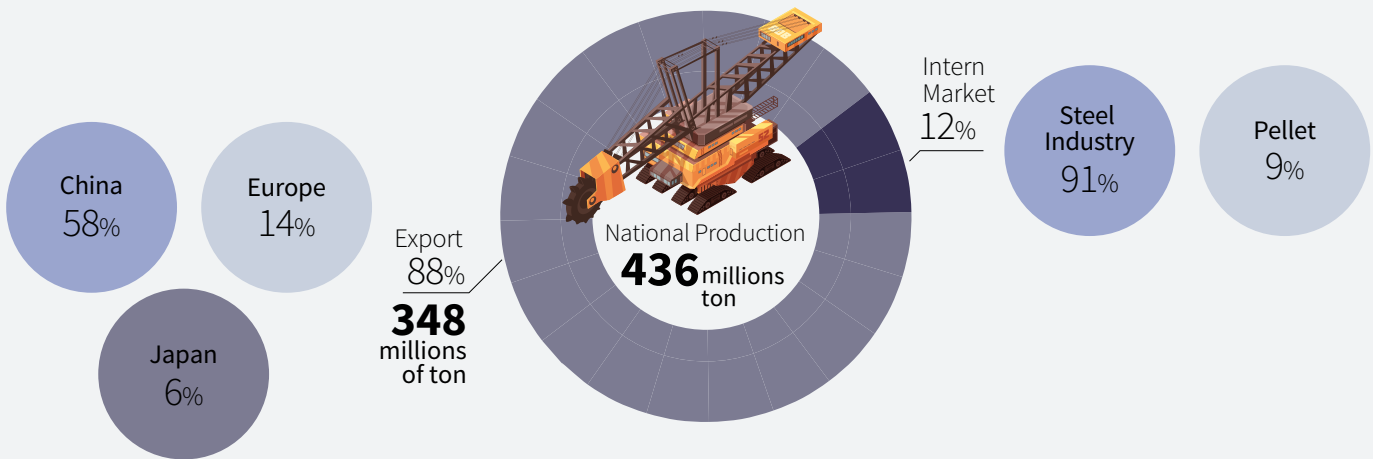


**Brazil's Iron Ore Exports (Million Ton)**



Source: World Steel

**Brazil's Iron Ore Exports (Million Ton)**

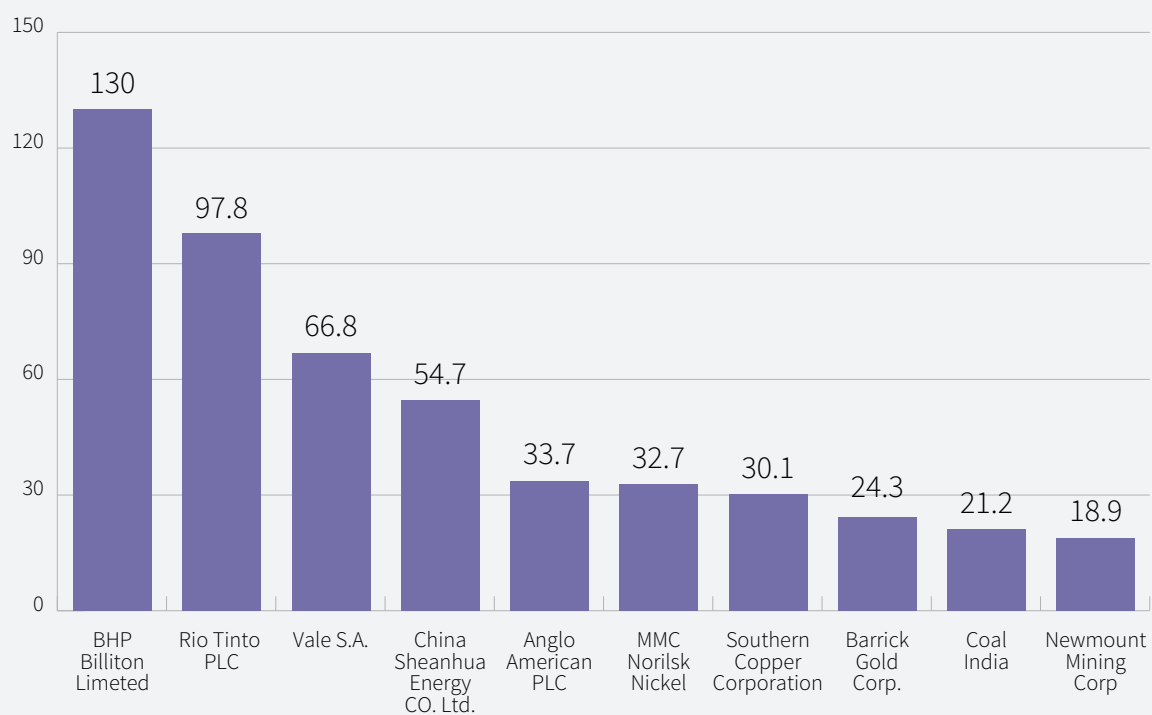


Source: World Steel

## 13.6. MAJOR PLAYERS IN MINING SECTOR

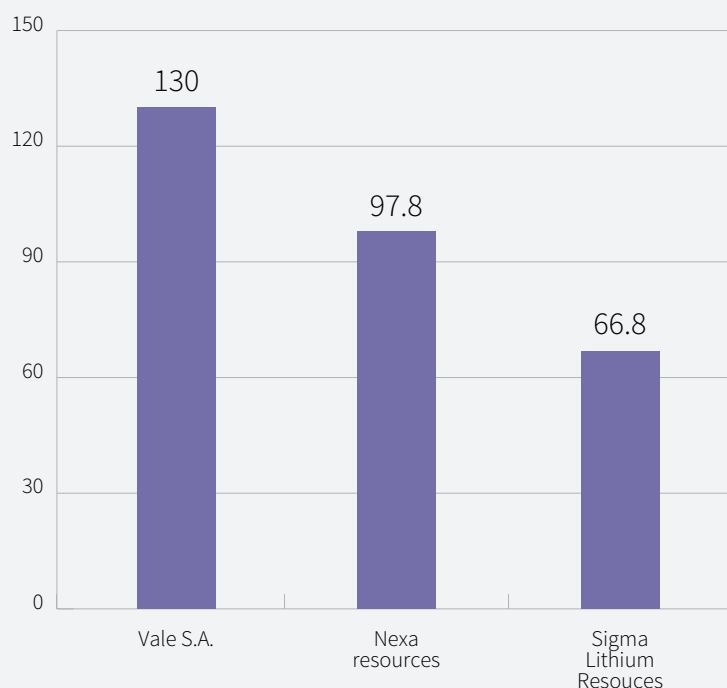
The main companies in the mining sector are the Australian company BHP Billiton, the British company Rio Tinto and the Brazilian company Vale. Considering Brazil one of the largest producers of ore, we highlight that Vale is today, despite all recent events in Brumadinho, the third largest mining company in the world by market cap.

**Top Global Mining Companies by Market Cap (US\$ Billions)**



Source: Bloomberg

### Top Brazilian Mining Companies by Market Cap (US\$ Billions)



Source: Bloomberg

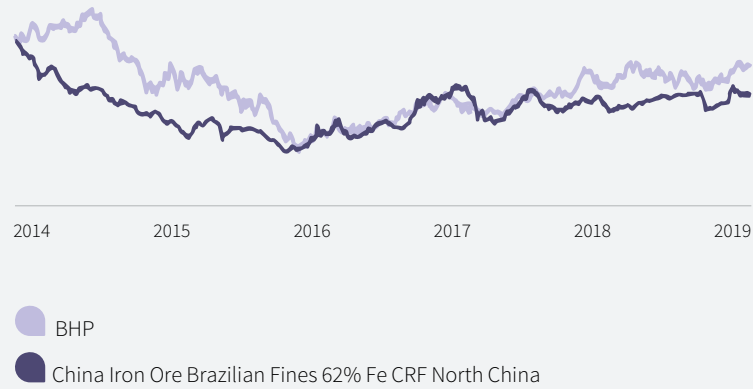
#### 13.6.1. BHP

BHP is a world-leading mineral resource company. The company extracts and processes minerals, oil and gas, with more than 62,000 employees and service providers, mainly in Australia and the Americas.

The products are sold worldwide, with sales and marketing led by Singapore and Houston in the United States. The world headquarters is in Melbourne, Australia.

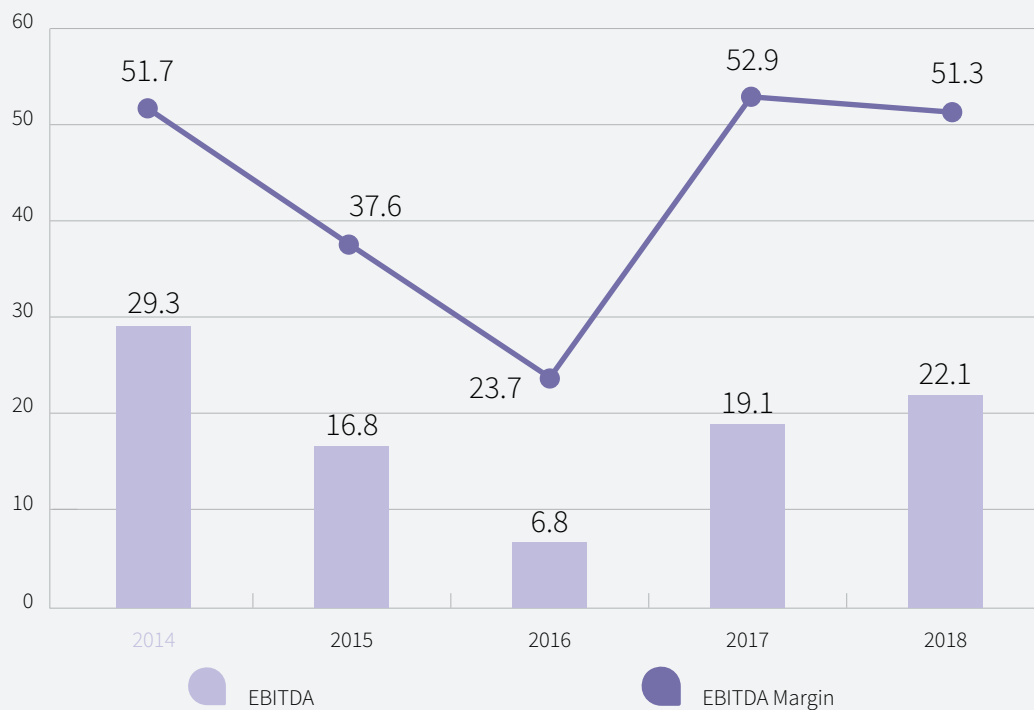
BHP operates under a Double List Company structure with two controlling companies (BHP Group Limited and BHP Group Plc) operated as a single economic entity.

## BHP vs Iron Ore Price



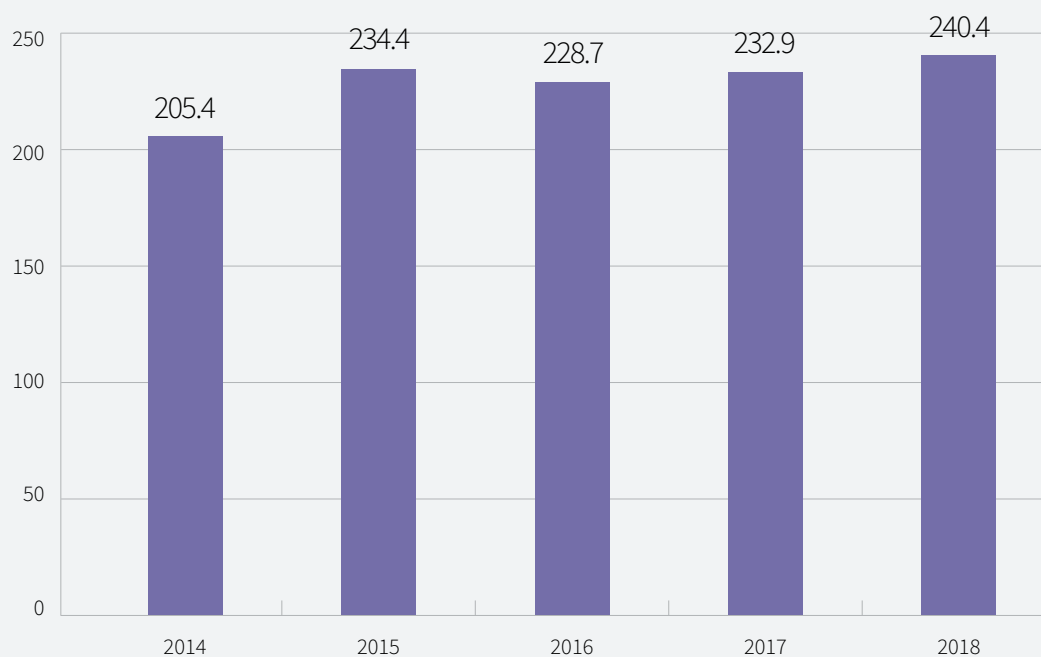
Source: Bloomberg

## BHP's EBITDA and EBITDA Margin (US\$ Billion)



Source: BHP and Bloomberg

### BHP's Iron Ore and Metals Production (Millions of Tons)



Source: BHP

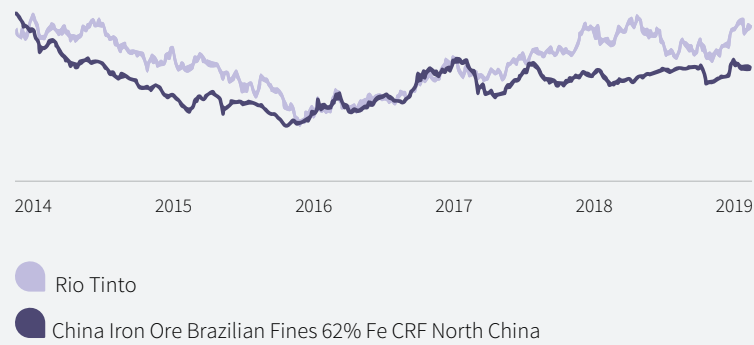
### 13.6.2. RIO TINTO

Rio Tinto is one of the largest mining operations in the world, along with Vale and BHP, with a double listing, as well as BHP.

The company is composed of five business units based on its main products: Iron Ore, Aluminum, Copper and Diamonds, Energy and Minerals and Other Operations.

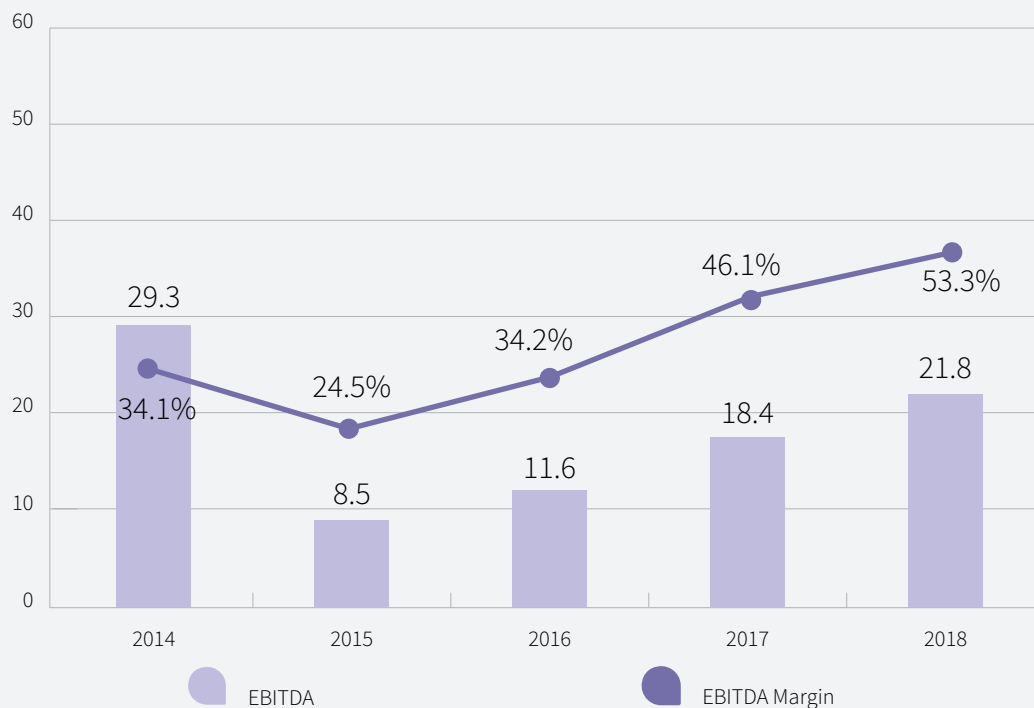
Iron ore sales account for about 45% of the total, aluminum, 25%, energy and minerals, almost 20%, and the coatings and diamonds, more than 10%.

## Rio Tinto vs Iron Ore Price



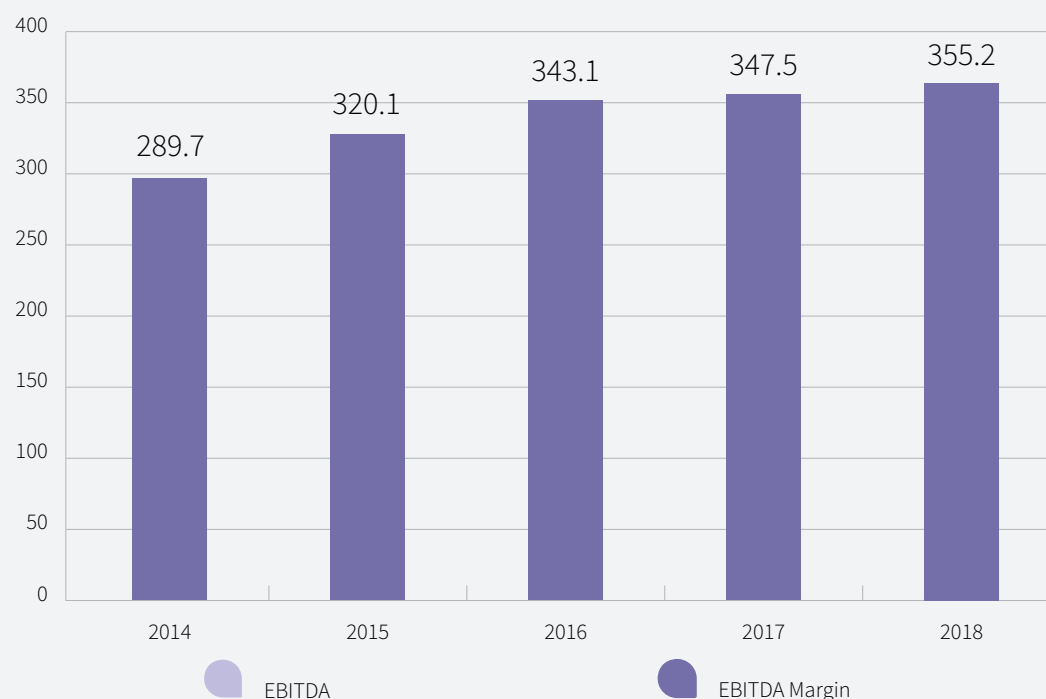
Source: Bloomberg

## Rio Tinto's EBITDA and EBITDA Margin (US\$ Billion)



Source: Rio Tinto and Bloomberg

### Rio Tinto's Iron Ore and Metals Production (Millions of Tons)



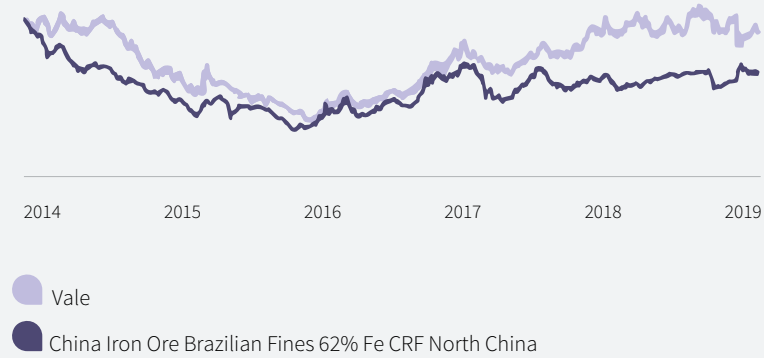
Source: Rio Tinto

### 13.6.3. VALE

Vale is a Brazilian multinational mining company and one of the largest logistics companies in the country. The company is among the largest mining companies in the world, being the largest producer of iron ore, pellets and nickel, a key raw material to produce steel and stainless material.

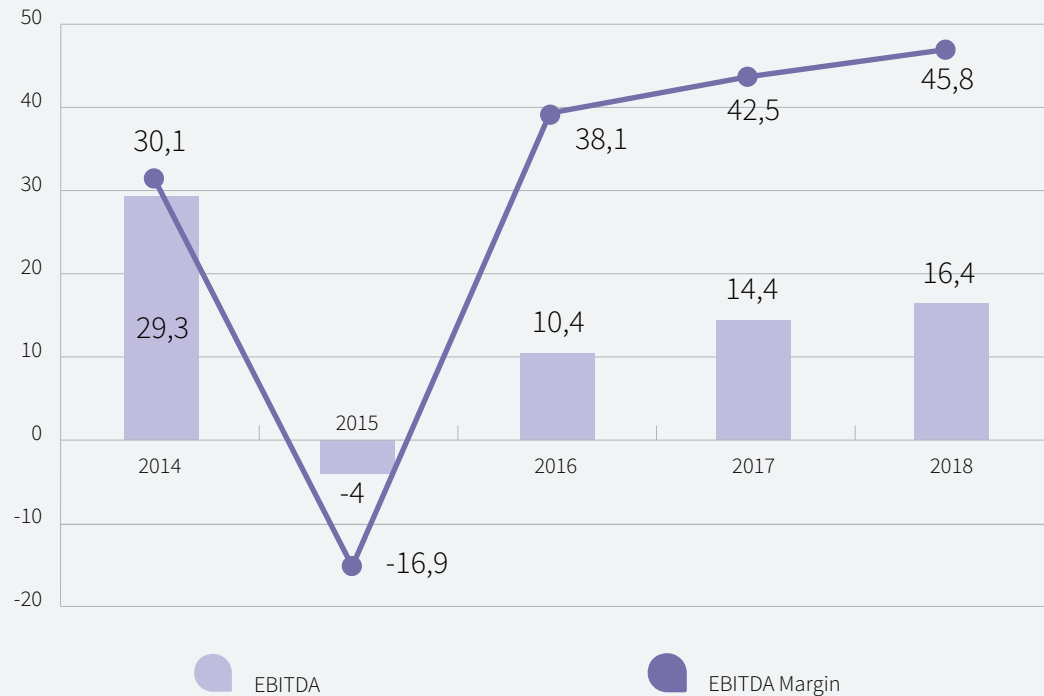
Vales logistics infrastructure is high-level, with railways, maritime terminals, distribution centers and ports. The company owns and freight bulk carriers to carry its own products.

## Vale vs Iron Ore Price



Source: Bloomberg

## Vale's EBITDA and EBITDA Margin (US\$ Billion)



Source: Vale and Bloomberg



## Vale's Iron Ore and Metals Production (Millions of Tons)

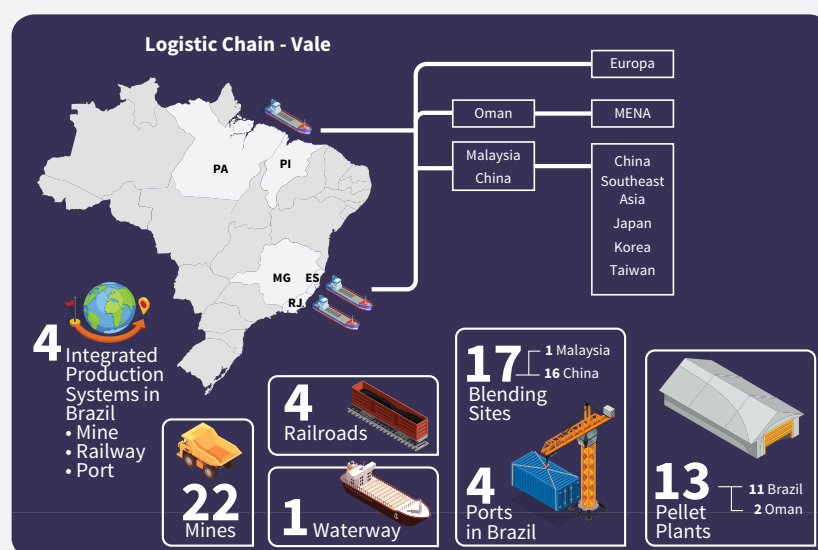


Source: Vale

## INFRASTRUCTURE AND LOGISTICS

“The management of the extensive, flexible and dynamic integrated value chain results in greater competitiveness and margin optimization”

### Vale's Logistic Chain



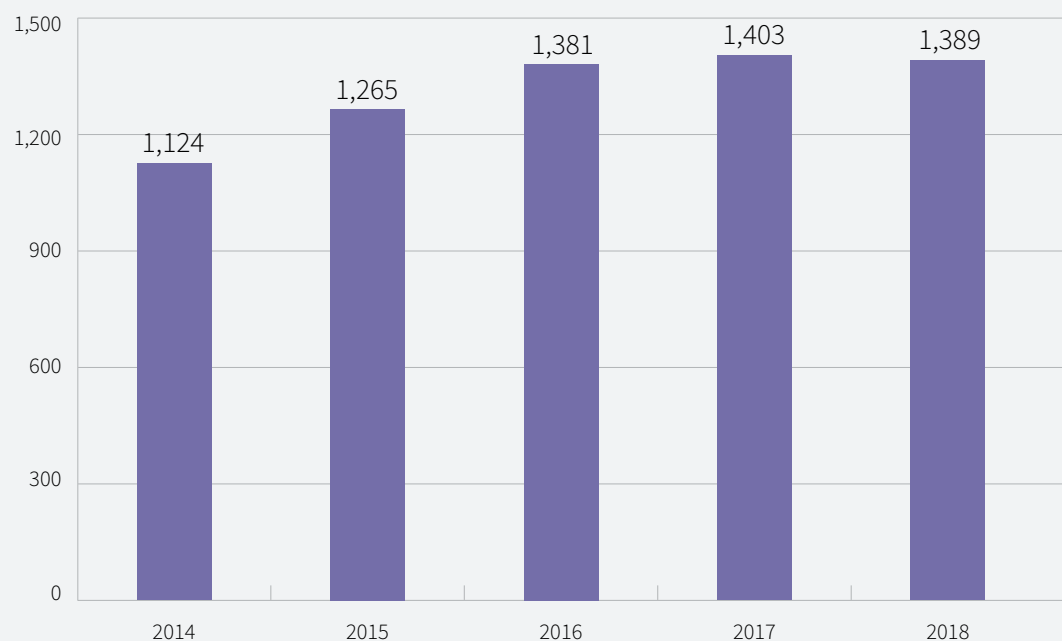
Source: Vale

## 13.7. MERGERS AND ACQUISITIONS IN MINING SECTOR

M&A activity in the mining sector is expected to continue to grow with companies to resume investment-led strategies in 2019, focusing on portfolio diversification by region or commodity type, aiming future growth and shareholder returns.

Major Transactions of the Mining Sector			
Buyer	Target	Transaction Volume	Type
Shenhua Group	China Guodian Corp.	US\$ 273.0 billion	Merge
Glencore	Xstrata	US\$ 90.0 billion	Acquisition
Rio Tinto	Alcan	US\$ 38.1 billion	Acquisition
Barrick Gold	Randgold Resources	US\$ 18.0 billion	Merge
CVRD	Inco	US\$ 13.3 billion	Acquisition
BHP	Billiton	US\$ 8.7 billion	Merge

### Number of Transactions



Source: Bloomberg

## Financial Volume (US\$ Billions)



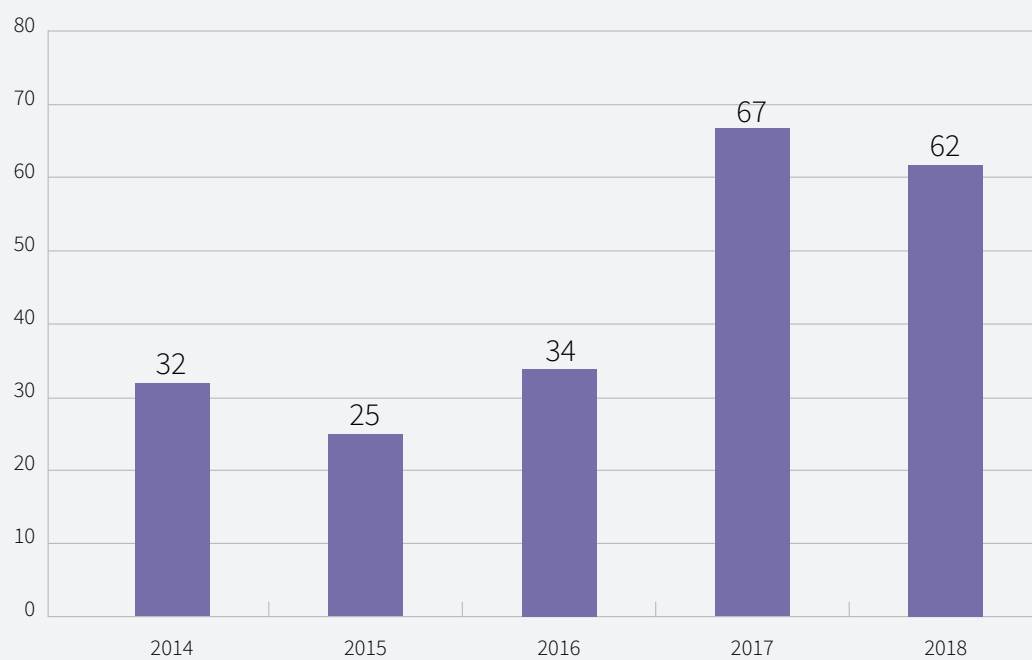
Source: Bloomberg

## 13.8. IPO AND FOLLOW-ON IN MINING SECTOR

Growth expectation of the mining industry coupled with the growing appetite for financing new projects, with increased demand for metals used in battery technologies. Besides that, commodity price stabilization should be a key factor for new emissions in 2019.

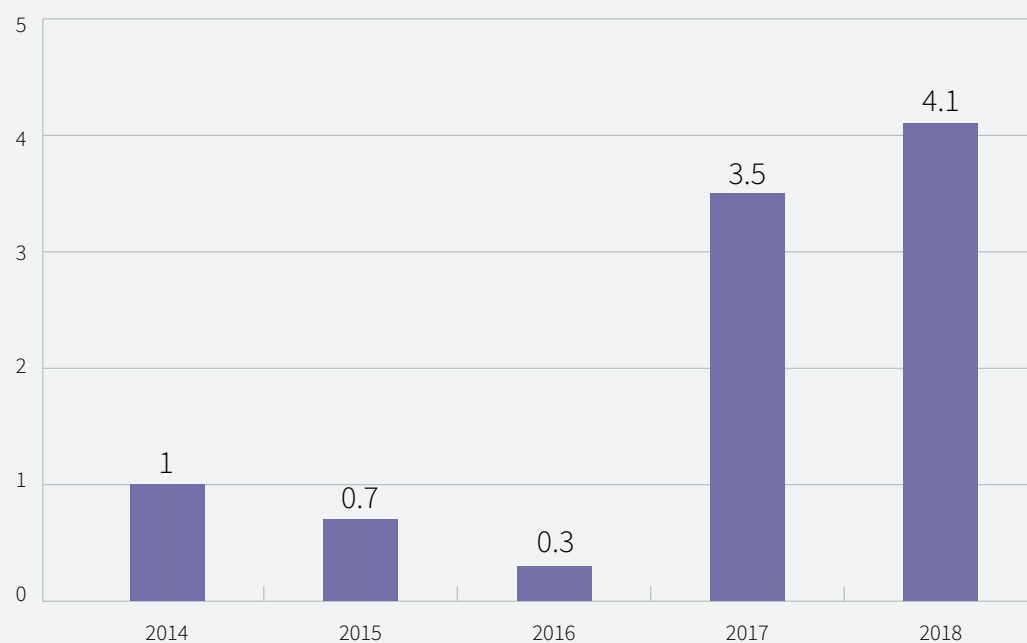
Latest Mining Emissions			
Company	Offer Size	Offer Price	Type
Tocvan Ventures Corp.	US\$ 0.4 million	US\$ 0.1	Primary Offer
Cobre Resources PLC	US\$ 0.7 million	US\$ 1.5	Primary Offer
NAC Kazatomprom JSC	US\$ 387.0 million	US\$ 11.6	Secondary Offer
Yandal Resources Ltd	US\$ 3.6 million	US\$ 0.2	Primary Offer
Dragon Mining Ltd	US\$ 12.9 million	US\$ 2.0	Primary Offer
FireFox Gold Corp	US\$ 1.6 million	US\$ 0.4	Primary Offer

### Number of Emissions



Source: Bloomberg

### Financial Volume (US\$ Billion)



Source: Bloomberg

# 14. TAXATION

## 14.1. OVERALL ASPECTS OF BRAZILIAN TAX SYSTEM

Broadly, taxes in Brazil may be classified in five (5) major groups<sup>91</sup>:

### I. INHERITANCE AND ESTATE TAXES

Inheritance and Estate Taxes	
Taxes	Concept
<b>Urban Real Estate Tax (IPTU)</b>	IPTU is a Municipal tax levied due annually on urban property. Its rates are normally progressive and its calculation basis is the fair market value of the real estate property as determined by the relevant tax authority. Its rates vary from municipality to municipality, but generally do not exceed 2%
<b>Vehicles Ownership Tax (IPVA)</b>	IPVA is a state tax levied annually on the ownership of any nature of automotive vehicles, meaning any vehicle with an auto propulsion mechanism that serves to transport persons or cargo or for traction of vehicles that transport persons or cargo. IPVA is levied at varying rates depending on the relevant state and the vehicle's destination (generally from 1% to 5%). IPVA's calculation basis is the fair market value of the vehicle as assessed by the relevant tax authority.
<b>Real Estate Transfer Tax (ITBI)</b>	Onerous transfers of real estate property and rights are subject to ITBI, a Municipal tax. As a rule, ITBI must be paid before the transfer is effected, if by a public deed, or, within a period of 10 (ten) days of its date, if by a private instrument. ITBI rates may vary from 2% to 6%, according to each Municipal law.
<b>Estate and Gift Tax (ITCMD)</b>	ITCMD is a state tax levied on transfers of assets or rights by reason of death (inheritance) or gifts (in case of living individuals). The rates may vary according to the laws of the State where the taxable event is deemed to take place. The maximum ITCMD applicable rate is currently 8%.
<b>Rural Property Tax on (ITR)</b>	ITR is levied annually on the ownership or possession of real estate in rural areas. Rates vary from 0.03% to 20% depending on the land value ("Valor da Terra Nua") and the level of utilization of the land.

91 It is indicated under the five (5) groups the most relevant taxes, others may apply on specific cases.

## II. TAXES ON INCOME AND REVENUES

Taxes on Income and Revenues	
Taxes	Concept
<b>Corporate Income Tax (IRPJ)</b> <b>+</b> <b>Social Contribution on Profits (CSLL)</b>	<p>Companies with residence in Brazil are subject to IRPJ and CSLL on their worldwide income.</p> <p>IRPJ is a federal tax charged on net taxable income. The basic tax rate is 15%, plus an additional rate of 10% on annual income that exceeds R\$ 240,000.00 per year or R\$ 20,000.00 per month.</p> <p>CSLL is a social contribution tax that is levied on the adjusted net accounting profits of Brazilian companies and its rate is 9%.</p> <p>There are two main tax regimes available to calculate IRPJ: the taxable profit method ("lucro real") and the presumptive profit method ("lucro presumido").</p> <p>Under the Taxable Profit method, IRPJ and CSLL are calculated quarterly or annually over the company's net accounting Profits, adjusted by additions (e.g. non-deductible expenses, as per tax legislation applicable) and exclusions (e.g. non-taxable revenues, as per tax legislation applicable) determined by the tax legislation; or</p> <p>Under the Presumptive Profit method, IRPJ and CSLL are calculated quarterly and their tax basis corresponds to a percentage of the company's gross revenues, as defined by Brazilian tax legislation, plus 100% of any other income/revenues. Said percentage varies from 8% to 32% for IRPJ purposes and from 12% to 32% for CSLL purposes pursuant to the activity performed by the company.</p> <p>Companies are allowed to choose to assess IRPJ/CSLL according to the Presumptive Profit Method provided that a set of conditions are met, such as (i) total revenues in the preceding year must not exceed R\$ 78,000,000.00; (ii) the company may not have profit, capital gains or other income of foreign origin (except for export revenues).</p>
<b>Social Contributions on Gross Revenues and Import (PIS/COFINS)</b>	<p>PIS and COFINS are taxes charged monthly over gross revenues, with certain exceptions and exclusions provided by law.</p> <p>There are currently two different systems to calculate PIS and COFINS: the non-cumulative and the cumulative systems.</p> <p>The non-cumulative system is mandatory for companies that are subject to IRPJ/CSLL under the taxable profit method. Under the non-cumulative system, contributions are levied at a combined 9.25% rate (1.65% for PIS and 7.6% for COFINS). The system aims to avoid the cumulative effect of these contributions in the commercial chain by granting certain credits that may be used to reduce PIS and COFINS levied on revenues generated by its transactions. Financial revenues of companies' subject to the non-cumulative taxation system are generally taxed at a 4.65% rate (0.65% for PIS and 4% for COFINS). Certain companies (i.e., financial institutions and companies subject to IRPJ/CSLL under the presumptive profit method) and specific revenues are taxed under the cumulative system, in which contributions are levied at a combined 3.65% rate ((0.65% for PIS and 3.00% for COFINS). No credits are allowed under the cumulative system.</p> <p>PIS and COFINS are also levied on imports of goods and services, payable by the importer generally at a total combined rate of 11.75% for imports of goods (2.1% for PIS and 9.65% for COFINS) or 9.25% for imports of services (1.65% for PIS and 7.6% for COFINS). Exports are generally exempt from PIS and COFINS.</p>

### III. EMPLOYMENT AND SOCIAL SECURITY TAXES

Employment and Social Security Taxes	
Taxes	Concept
<b>Social Security Contribution (INSS) and other Payroll Taxes</b>	<p>INSS contribution is charged from employers, companies and other entities treated as such by law at the general rate of 20% on the total amount of remuneration paid or credited for work performed, for any reason, during the month, to individuals providing services. It includes tips, routine payments, utilities, advance payments and other benefits.</p> <p>Certain companies may choose to pay INSS over their gross revenues (in substitution of the 20% over payroll), in the so-called Contributions on the Companies' Gross Revenues (CPRB). CPRB's tax rates range from 2% to 5% depending of the activity explored by the company.</p> <p>Other taxes apply exclusively on the payroll of employees (i.e., individuals under a labor relation). The rates of these additional taxes vary according to the companies' activities; usually they could reach up to 11.8% for non-financial institutions.</p> <p>Social security contributions are also paid by workers. The contributions of the insured are calculated upon the total remuneration received monthly according to the limits of a table, which is periodically updated.</p>
<b>Severance Fund (FGTS)</b>	<p>Employers must collect, on a monthly basis, an amount equal to 8% of the employee's salary to a specific government held account, on behalf of each employee. The deposited amount may only be cashed in cases established by law, such as dismissal without cause, termination of an employment agreement that had an indefinite term of duration, retirement, purchase of a home, death, among others.</p>

## IV. EXCISE VAT TAXES

Excise VAT Taxes	
Taxes	Concept
<b>Tax on Manufactured Products (IPI)</b>	<p>IPI is levied upon (i) imports; and (ii) sales of manufactured products. IPI rate is determined based on the Tariff Classification Code of the Product (HTS) issued by the Federal Government.</p> <p>IPI is a non-cumulative tax, meaning the taxpayer may set off, against IPI payable on sale, a credit equal to the IPI paid upon acquisition of the product or its input.</p>
<b>State Value-Added Tax (ICMS)</b>	<p>ICMS is a state Value-Added Tax (VAT) levied on import and sales of goods, as well as on provision of communication services and interstate and intermunicipal transport services.</p> <p>Because ICMS is a state tax, its rates and specific rules vary from state to state, and according to the type of transaction being performed (e.g., instate or outstate sale of goods, communication or transportation services, etc.).</p> <p>According to the Brazilian tax legislation, ICMS is a non-cumulative tax (similarly to IPI), which means that in some cases ICMS taxpayers may recognize a tax credit in the amount of the tax paid in the previous transaction involving the same good or its inputs.</p>
<b>Municipal Tax on Services (ISS)</b>	<p>ISS is a Municipal tax charged on revenue derived from provision of certain services expressly listed both in Federal and Municipal Laws. ISS is also levied on imports of services. No ISS is due on exports of services provided that the “results” of such services happen abroad .</p> <p>ISS taxpayers are generally the service providers. Applicable rates vary from 2% to 5% (depending on the municipality where the importer/service provider is located and the type of service being imported/provided). ISS is a cumulative tax.</p> <p>Usually, if the service provided also involves sales of goods, ISS applies to the total price of the transaction, but there are some exceptions due to specific provisions determining the applicability of ICMS on the value of the good sold</p>

92 The meaning of “results” and the location in which it is verified is not defined by law and there are several ongoing discussions between taxpayers and tax authorities on the issue.



## V. MISCELLANEOUS EXCISE TAXES

Miscellaneous Excise Taxes	
Taxes	Concept
<b>Import Duty (II)</b>	It is levied on the customs value of imported goods, comprised of the cost of the product, international insurance and freight (CIF value). Import tax is due upon customs clearance of the imported products. Rates vary according to the tax classification code of the imported product.
<b>Tax on Financial Transactions (IOF)</b>	IOF is a federal tax levied on foreign currency exchange, credit transactions, insurance transactions, and transactions with bond and securities. The tax also applies to gold transactions (in which gold is treated as a financial asset or negotiable instrument). IOF rates vary according to the type of transaction, and are frequently reduced or increased by Federal Government
<b>Contributions on Economic Domain (CIDE)</b>	Brazilian companies that hold licenses to explore rights, purchasers of know-how or parties to contracts that imply transfer of technology executed with non-residents and those domiciled abroad are subject to CIDE. CIDE contribution is also due by companies that hire from non-residents technical services, administrative assistance and other similar services, as well as by the legal entities that pay, credit, deliver, use or remit royalties, of any type, to beneficiaries residing or domiciled abroad. CIDE rate is 10% and the taxpayer is the Brazilian legal entity.

- 
- 93 IOF/FX is levied upon conversion of Brazilian Reais into foreign currency, as well on the conversion of foreign currency into Brazilian Reais. Most FX transactions are currently subject to IOF/FX at a 0.38% rate. FX transactions relating to foreign loans to a Brazilian borrower are subject to a general 0% IOF/FX rate (both inflow and outflow of funds). A 6% rate applies to inflows of such funds into Brazil in connection with short-term foreign loans to Brazilian resident borrowers (minimum average term up to 180 days).
- 94 IOF also applies to credit transactions in general entered into by financial or non-financial entities (IOF/Credit), except for foreign credit transactions which are exempt.

## 14.2. WITHHOLDING TAXES

<b>Withholding Income Tax (IRRF)</b>	<p>Certain payments made by Brazilian sources are subject to the Withholding Income Tax ("IRRF"). The amount withheld can serve as a partial anticipation of the total income tax liability (mainly when the beneficiary is a Brazilian resident), or as a definitive form of income taxation (mostly on payments made to non-residents and, in some cases, to individuals). IRRF rates vary upon the nature of the operation being performed.</p> <p>The income, capital gains and other forms of compensation paid, credited, delivered or remitted by Brazilian sources to non-resident individuals or legal entities are subject to IRRF at a general<sup>95</sup> 15% rate. This rate is generally increased to 25% when such remittances refer to services or employment or when the beneficiary is resident or domiciled in a country categorized as tax favorable jurisdiction by the Brazilian Federal Revenue<sup>96</sup>.</p>
<b>Withholding CSLL, PIS/ COFINS and ISS</b>	<p>Considerations paid in transactions between Brazilian companies for the rendering of a specific set of services (such as: cleaning services, security services and others) may be subject to withholding CSLL, PIS/COFINS and ISS</p>

95 Exceptions apply depending on the nature of the remittances made, the existence of a Double Tax Convention ("DTC") between Brazil and the recipient jurisdiction of residency, as well as if the beneficiary is located at a favorable tax jurisdiction (Tax Haven). Also, some specific services are subject to IRRF at a 25% rate; such services are not taxed by CIDE.

96 Brazilian Federal Revenue publishes an official list containing all the countries deemed as such.

## 14.3. BRAZILIAN TAX INCENTIVES

Tax Incentive	FIP-IE and FIP-PD&I <sup>101</sup>	Infrastructure Bonds <sup>102</sup>	FI-Infra
<b>Objective</b>	In order to stimulate private investments in infrastructure projects of public interest and research, development and innovation projects, the Brazilian Government has enacted Law No. 11,478/2007, which creates two investment funds: FIP-IE (Fundo de Investimento em Participações em Infraestrutura) and FIP-PD&I (Fundo de Investimento em Participação na Produção Econômica Intensiva em Pesquisa, Desenvolvimento e Inovação).	Planning to boost long-term credit and the financing market in connection with infrastructure projects, the Brazilian Government created (Law No. 12,431/2011) Infrastructure Bonds, to be issued by special purpose companies organized as corporations (sociedades por ações – “S/A”), set up to develop infrastructure projects.	To foster further investments in Infrastructure Bonds, CVM has enacted a Resolution that allows such investments via a collective investment vehicle — FI-Infra (Fundos Incentivados de Investimento em Infraestrutura) or FIC-FI-Infra (Fundos de Investimentos em Cotas de Fundos Incentivados de Investimento em Infraestrutura).
<b>Target</b>	The funds must invest at least 90% of their equity in any security issued by a public or closely-held special purpose company (SPC) in the following areas: (i) energy; (ii) transport; (iii) water and sanitation; (iv) irrigation; (v) and other areas considered as priorities by the Federal Government. In addition, each FIP-IE or FIP-PD&I must have at least five (5) quotaholders, each with no more than 40% of the shares issued by the fund or earn income greater than 40% of the fund’s income.	Those investing in bonds issued to raise funds for investments aimed at implementation, expansion, maintenance, recovery, adaptation or modernization of enterprises of the following sectors: (i) logistics and transportation; (ii) urban mobility; (iii) energy; (iv) telecommunications; (v) broadcasting; (vi) sanitation; and (vii) irrigation. Also, under Decree No. 8,874 (October 11, 2016), priority projects are those related to concessions, permissions, leases, permits or public-private partnership pursuant to Law No. 11,079 (December 30, 2004), and those that are under the Investment Partnership Program, per Law No. 13,334 (September 13, 2016).	FI-Infra must invest at least 85% of their equity in Infrastructure Debentures. FIC-FI-Infra must invest at least 95% of their total equity in quotas of FI-Infra.

97 Please see more information on section 10.

98 Please see more information on section 10.

**Benefits/  
Characteristics**

Income earned on the redemption of quotas (regardless of the liquidation of the fund) is subject to withholding income tax (IRRF) at 15% on the positive difference between the redemption value and the acquisition cost of the quotas. Capital gains earned by selling FIP-IE or FIP-PD&I quotas will be taxed: (i) at 0% when accrued by individuals in transactions carried out in or out the stock market; (ii) as net profit, at a 15% rate, when accrued by legal entity in transactions carried out in or out the stock market; and (iii) at the rate of 0%, when paid, credited, delivered or remitted to beneficiary residing or domiciled abroad.

Provided some infrastructure projects are given priority as regulated by the Federal Executive Branch, the remuneration of these bonds is subject to withholding income tax (IRRF) at 0% rate, for of individuals, and 15%, if the investor is a Brazilian corporation.

The main features of these bonds are: (i) remuneration must be paid either by a fixed interest rate or rate connected to the inflation rate; (ii) the average maturity should be more than four years; (iii) the issuer (or any related party) may not have a call option for at least two years, nor should the issuer be allowed to early payment or to early termination, except if certain conditions are met; (iv) the buyer shall not commit to resale; (v) periodic income payments, if any, should be at least 180 (one hundred eighty) days apart; (vi) the security must be registered in the registration system by the Brazilian Central Bank or the Brazilian Securities and Exchange Commission (CVM), in their respective areas of authority; and (vii) simplified procedure demonstrating commitment to allocate the funds raised in future payments or reimbursements of expenses, expenses or debts related to investment projects.

The remuneration of the fund is subject to withholding income tax (IRRF) at 0% rate for individuals and non-residents, and 15% if the investor is a Brazilian corporation.

For these purposes, the remuneration of the fund also includes capital gains derived from the sale of the fund's quotas

## 14.4. BRAZILIAN SPECIAL TAX REGIMES

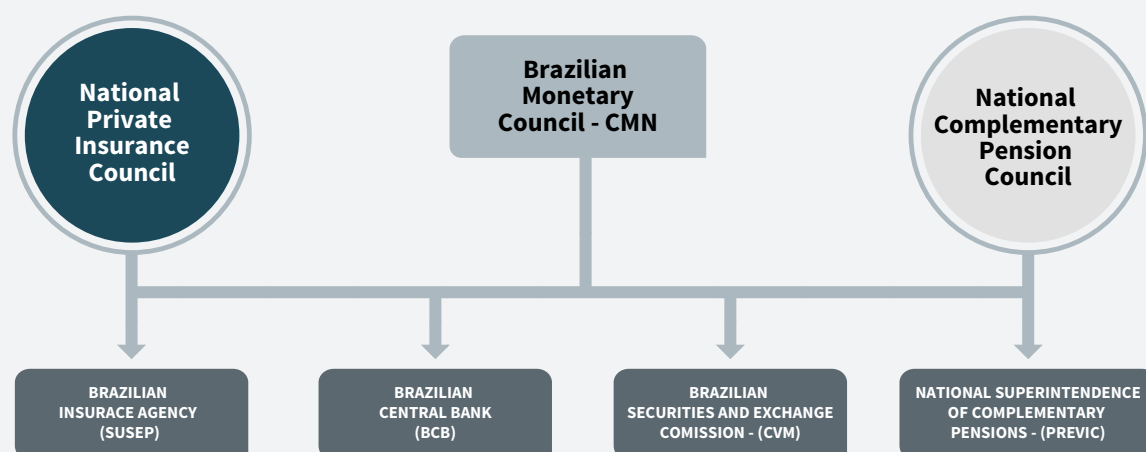
Tax Incentive	REIDI (Special Incentive Regime for Development of Infrastructure)	REPORTO (Tax Regime to Stimulate the Modernization and Extension of the Port Structure)
<b>Objective</b>	<p>REIDI is a special regime whose goal is to foster private investments in the infrastructure sector, especially by companies interested in investing in the transport, port facilities, energy, sanitary and irrigation sectors. REIDI benefits are conditioned to the application within the Federal Government.</p>	<p>The Tax Regime to Stimulate the Modernization and Extension of the Port Structure (REPORTO) aims to reduce the tax burden on acquisition of capital assets for modernization and expansion of Brazilian ports.</p>
<b>Target</b>	<p>REIDI benefits apply to the following infrastructure projects:</p> <ul style="list-style-type: none"> <li>• Transport: roads, waterways, public or private ports, urban trains and railroads, including locomotives and railway cars;</li> <li>• Energy: generation, transmission and distribution of power and natural gas production and processing.</li> <li>• Sanitation concerning the supply of drinking water and sewage system infrastructure;</li> <li>• Irrigation;</li> <li>• Gas and oil pipes.</li> </ul>	<p>Imports and domestic purchases of listed machinery and equipment, as well as spare parts, by port operators, offshore vessel operators, and concessionaries of rail transport under REPORTO enjoy IPI, PIS and COFINS suspension when they are used as company's assets regarding the port infrastructure. There is also a II suspension on imports of said products. In this sense, acquisitions of machinery and equipment for the following port activities are eligible to enjoy REPORTO tax breaks (eligible machinery and equipment are listed in a presidential decree): (i) loading, unloading, and movement of cargo; (ii) operational support auxiliary systems; (iii) environment protection; (iv) security and monitoring systems of people, merchandise, products, vehicles and vessels; (v) dredging; and (vi) workers training.</p>
<b>Benefits/ Characteristics</b>	<p>REIDI benefits are mainly suspension of PIS and COFINS charged on local acquisition and import of new machinery, tools and equipment to be used in or integrated into infrastructure investments that will be incorporated in the beneficiary's fixed assets. The material used in the construction of infrastructure is granted with the suspension of PIS and COFINS under the REIDI regime. Upon the use or incorporation of such goods to the infrastructure investments the suspension of the PIS and COFINS social contributions will be converted into zero rates. REIDI benefits will apply for five years starting at the approval of the infrastructure project by the competent tax authorities.</p>	<p>Grants suspension of Import Tax, IPI, PIS/COFINS and PIS/COFINS-Import. Import tax and IPI suspended under REPORTO become a tax exemption after five (5) years from the date of purchase of the piece of equipment of machinery. For COFINS and PIS, the suspension becomes a zero-rate after the same five-year period. The reason for granting a tax suspension upfront (which will be eventually converted into a tax exemption or zero-rate) is to avoid deviation of purpose upon purchase of eligible machinery and equipment. Any deviation of purpose or use of eligible equipment revokes the suspension and triggers the suspended taxes with interest and penalty. In addition, the taxpayer is subject to a statutory penalty of 50% of the value of the misused piece of equipment. REPORTO benefits apply to imports local purchases carried on until December 31, 2020.</p>

# 15. FINANCING PROJECTS AND THE CAPITAL MARKETS

The expansion of private financing in infrastructure in Brazil faces some challenges. Since the projects take a long time to be completed and, consequently, to become profitable, financing by private investors depends not only on an efficient regulatory and legal system where the contracts and the guarantees will be fully enforced, but also on effective financing mechanisms, to support the private sector.

The Brazilian Federal Government has been changing its role in infrastructure financing, trying not to be an essential part in the financing, but becoming an important player in the regulation of this sector, in order to improve private participation. Capital market is due to play key role in this process, replacing the Government as principal lender and allowing to concentrate its actions on providing the appropriate incentives to the private sector become the principal financier of the infrastructure.

## 15.1. BRAZILIAN FINANCIAL SYSTEM - LEGAL AND REGULATORY RULES AND ITS MAIN PARTICIPANTS



### BRAZILIAN MONETARY COUNCIL

The Brazilian Monetary Council (CMN) is the highest body in the Brazilian Financial System. It formulates monetary and credit policies in order to provide currency stability and economic and social development for the country. Its board members<sup>99</sup> are: (i) the Economy Minister, as CMN President; (ii) the Special Secretary for Finance from the Economy Ministry; and (iii) the President of the Brazilian Central Bank.

CMN is the policy board that oversees financial institutions and other entities regulated by the Brazilian Central Bank and the Brazilian Securities and Exchange Commission. CMN does not have supervisory powers – it issues general guidelines that apply to the entire financial and capital markets in Brazil.

### CMN GUIDELINES ARE ACCOMPLISHED BY THE MARKET THROUGH INTERNAL RULES RELEASED BY BCB AND CVM

Besides BCB and CVM, the Brazilian Financial System regulatory structure is comprised of other regulators which this document will not describe in deep details, the Insurance Superintendence (*SUSEP*) and the National Superintendence of Complementary Pensions (*PREVIC*).

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99 According to Law No. 9,069/1995

## 15.2. FINANCIAL AND CAPITAL MARKETS

### i. Financial Market

The financial market has an important role in the development of infrastructure financing. Despite all the negative impacts observed in recent years due to financial and political crisis, private financial institutions have always been great allies of this sector.

The most common structures related to infrastructure financing in Brazil have been Project Finance and Syndicated Loans, considering the long terms and the risks involved in this kind of transaction.

In addition to financing structures, private financial institutions also have an important and direct role granting bridge loans to companies that are still going through the process of obtaining financing from the Brazilian National Economic and Social Development Bank (BNDES).

In indirect transactions, financial institutions are intermediaries between the borrower and BNDES, assuming all credit risks related to the transaction in case the borrower defaults. Besides, the financial institution negotiates directly with the borrower all conditions of the transaction, such as term of payment and guarantees, in accordance with the rules and limits established by BNDES.

### ii. Capital Market

The participation of the capital market as a source of financing for long-term projects has consistently increased recently.

The Brazil's capital markets basic legislative framework is composed by:

- Law No. 6,385, dated as of December 7, 1976, as amended, regulates the market and created CVM;
- Law No. 6,404, dated as of December 5, 1977, as amended, regulates the structure, organization and responsibilities of corporations in general;
- CVM Instruction No. 400, dated as of December 29, 2003, regulates how companies can raise public funds through registered offerings at CVM ("CVM Instruction 400");
- CVM Instruction No. 476, dated as of January 16, 2009, regulates how companies may raise public funds through unregistered offerings at CVM with limited access to investors ("CVM Instruction 476"); and
- CVM Instruction No. 480, dated as of December 7, 2009, regulates public companies and their disclosure requirements.



## 15.3. MAIN FINANCING STRUCTURES IN BRAZIL

Structures		Main Figures for Brazilian Financing Market Landscape
<b>Project Finance</b>		Project Finance is a financing arrangement in which long-term projects, executed by Special Purpose Companies (SPC) pay for loans according to the cash flow generated by the project itself. Collateral given by borrowers are non-recourse and can be freely agreed upon the parties. Be aware that Brazilian financing structures for infrastructure usually demand corporate collateral, different from the common non-recourse project finance arrangement.
<b>Syndicated loans</b>		Syndicated loans are debts issued to a group of lenders, usually commercial and investment banks, by a sole borrower, administered by a common agent. It is common to see project finance lending extended to finance infrastructure projects in Brazil through a syndication of lenders.
<b>Investment Funds</b>	<b>General Concept</b>	Investment funds are a modality of collective investment that brings together financial proceeds of several investors for joint investment. It is created by an administrator, usually a financial institution or a brokerage firm, which formally sets it up and defines its objectives, investment policies, the categories of financial assets it can invest in, the fees it will charge for services and other general rules of participation and organization. In Brazil these Funds are regulated by CVM.
	<b>Receivables Investment Fund<sup>100</sup></b>	This investment fund modality is regulated by CVM Instruction No. 356/2001, and its purpose is the investment in the acquisition of receivables of all kinds. Law No. 12,431/2011 was published with the purpose of creating a privileged tax regime for investors that invest in assets and financial instruments intended to finance infrastructure projects (including receivables funds and debentures). In order to enjoy the tax benefits introduced by this legislation, receivables funds need to be structured as closed funds, the seller of the receivable must not be a financial institution and the fund bylaws need to meet certain requirements.
	<b>Private Equity Funds<sup>101</sup></b>	This investment fund modality is regulated by CVM Instruction No. 578/2016, and its purpose is the investment of its proceeds in the acquisition of shares, subscription bonus, convertible and non-convertible bonds and other securities convertible in shares issued by companies, as well as securities representing equity in limited liability companies. Through an investment fund structure, the fund participates in the decision process of the invested company, with influence on its strategic policy and management. Federal Law No. 11,478/2007 created a specific form of private equity fund for infrastructure investment. It must maintain its equity invested in shares, subscription bonus, debentures/bonds or other securities issued by corporations that develop new infrastructure projects or intensive economic production in research, development and innovation in the national territory, in the sectors of energy, transportation, water and sanitation, irrigation and other areas considered as priorities by the Federal Government.
	<b>Infrastructure Investment Fund<sup>102</sup></b>	This type of investment fund is regulated by CVM instruction No. 555/2014, and its purpose is investing in the acquisition of assets described in Law No. 12,431/2011 (Investment Funds that invest in infrastructure projects and/or infrastructure bonds).

100 Please see more information on section 7.

101 Please see more information on section 7.

102 Please see more information on section 7.

<b>Infrastructure Debentures<sup>103</sup></b>		These are medium- and long-term debt securities issued by corporations, granting the holder a credit right against the issuer, pursuant to the terms and conditions of the debentures indenture. Debentures can be issued to the public in general, in accordance to CVM Instruction 400 or to institutional and professional investor, as per CVM Instruction 476. Federal Law No. 12,431/2011 grants a privileged tax regime for holders of these bonds investing in infrastructure projects, as long as some conditions are met.
<b>Real Estate Receivables Certificates</b>		Real Estate Receivables Certificates (CRI) are debt securities issued by a securitization company backed by real estate credit rights, which grant the holder a credit right against the issuer, pursuant to the CRI indenture. CRIs may be issued to public in general, in accordance to CVM Instruction 400 or to institutional and professional investor, per CVM Instruction 476. Federal Law No. 12,431/2011 created a privileged tax regime for CRI holders who invest in infrastructure projects, as long as conditions are met.
<b>BNDES</b>	<b>General Concept</b>	BNDES has been the main public financing agent for development in Brazil. Currently, its role in infrastructure financing is being restructuring. The bank intends to no longer have an isolated creditor participation and start to complement the role played by the financial and capital market. BNDES has already published new rules that have decreased its participation in project financing, making financed companies use equity or obtain new financing from the private sector to make up for the percentage not financed by BNDES. The transactions carried out by BNDES are commonly structured in two ways: (i) directly with BNDES without the intermediation of any financial institution (direct transactions); or (ii) via on-lending made by intermediary financial institutions (indirect transactions).
	<b>Finame</b>	Finame is a special financial support mechanism maintained by BNDES and used to finance the production, acquisition, commercialization and modernization of machinery, equipment, industrial systems, heavy vehicles and aircrafts. The guarantees of this line of credit are agreed upon by borrower and lender, in case of indirect transactions. In case of direct transactions, the borrower gives security interest (mortgage, pledge, fiduciary lien, receivables, among others) and personal guarantees (accommodation and suretyship). In either case, when financing is intended to purchase machinery and equipment, the borrower grants fiduciary lien of the purchased machinery or equipment in favor of lender as guarantee.
	<b>Finem</b>	BNDES has several financial support mechanisms specific to finance projects in Brazil. These lines are made available to borrowers via the Finem program, contemplating transactions whose total amount exceeds R\$ 20 million. There are specific lines with specific conditions (tenor, maximum participation, interest rate and guarantees, among others) according to the sector of investment (sanitation, energy, urban mobility, logistic, oil and gas and telecom). The project to be financed must be individually approved by BNDES, considering different evaluation criteria, such as the benefits the project will generate.
<b>Multilateral Development Institution</b>		International organizations, also known as Multilateral Development Institution, are important members of infrastructure financing in Brazil. They are created by the main countries to finance and cooperate with the development in the different areas as sectors, such as infrastructure, politics, commerce, economy.

103 Please see more information on section 7.

## 15.4. FOREIGN INVESTMENTS IN BRAZIL

Foreign investments in Brazil are allowed by Brazilian law and regulated by CMN, BCB and CVM. The applicable requirements depend basically on the modality of investment and on the type of assets in which investors allocate the investments.

### **i. Resolution No. 4,373, dated as of September 29, 2014 issued by CMN**

The Resolution No. 4,373, in force since March 30, 2015, regulates all terms and conditions related to foreign investments in the Brazilian financial and capital markets.

Prior to sending the investments into the country, the foreign investor must: (i) appoint a representative in Brazil, which must be a financial institution authorized by the BCB to provide this service; (ii) obtain registration with CVM; and (iii) appoint a custodian authorized by CVM.

The assets and the financial transaction to be negotiated by the foreign investor must: (i) be registered, held or maintained in a deposit account in an institution or entity authorized to provide such services by BCB or CVM; or (ii) be duly registered in clearing, settlement or registration electronic systems authorized by BCB or CVM.

### **ii. Federal Law No. 4,131/1962**

Federal Law No. 4,131/1962 regulates the inflow of financial or monetary proceeds to Brazil from foreign investors, to be invested in economic activities other than financial and capital markets. These financial or monetary proceeds will be treated on equal terms with local proceeds, and any discrimination not established in law is prohibited.

Registration of foreign investments with BCB is required within 30 (thirty) days as of the date of its coming into Brazil and regardless of paying any fee.

# 16. ENVIRONMENTAL LICENSES

## 16.1. ENVIRONMENTAL LEGAL FRAMEWORK

Per the Brazilian Constitution, the Federal Government enacts general rules on environmental matters and States and Municipalities may complement them when related to local issues.

All public entities (federal, state and municipal governments) have to protect the environment. Federal Law No. 6,938/1981 establishes the Brazilian Environmental Policy and defines the mechanisms and guidelines for environmental protection.

The Brazilian Environmental Policy also creates the National System for Environment Protection, of which several public bodies are part, such as the National Council for Environmental Matters (CONAMA), the Federal Environmental Agency (IBAMA) and the Federal Environmental Parks Entity (ICMbio) as well as the Ministry of the Environment.

Specific environmental legislation complements the Brazilian Environmental Policy, including, for example, the National Policy for Waste Management (Federal Law No. 12,305/2010), the National Policy for the Use of Water Resources (Federal Law No. 9,433/1997) and Supplementary Law No. 140/2011.

## 16.2. ENVIRONMENTAL LICENSING IN BRAZIL

According to the Brazilian Environmental Policy<sup>104</sup>, constructing, installing, expanding and operating activities that use environmental resources, that pollute or may pollute, or that may cause environmental damages, depend on licensing. Obtaining environmental licenses depends on technical conditions that must be complied with.

The federal government, states and municipalities may issue environmental licenses according to their authority.

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104 Additionally, to Brazilian Environmental Policy, environmental licensing is also regulated by Federal Law No. 140/2011 and CONAMA Regulation No. 237/1997.

At the national level, IBAMA is the agency responsible for environmental licenses for activities provided in federal legislation. For example, establishing premises in indigenous lands or involving two or more states; activities related to nuclear energy; federal roads; railroads; federal hydroelectric assets; federal ports; oil and gas.

Each state must have an environmental licensing department. All activities or establishments that use environmental resources that could damage the environment need a license. Each state provides which activities are subject to licensing. An activity that is subject to licensing in one state could be exempt in another. But mainly the licensed activities are common in all states.

Specific municipal departments are responsible for issuing environmental licenses for a number of activities and establishments that may cause local environmental damages or that are located within conservation areas created by the city.

## **IT IS GOOD PRACTICE TO CAREFULLY ASSESS FEDERAL AND LOCAL REGULATION.**

There are 4 types of licenses<sup>105</sup> according to the nature, aspects and stage of the project:

- Preliminary License;
- Installation License;
- Operating License; and
- Simplified License.

**Preliminary Licenses** are issued during the preliminary stage of the project, to approve its location, to attest to its environmental viability and to establish basic requirements and conditions that must be complied with during the next stages.

**Installation Licenses** authorize the installation of the project, regarding the specifications of the plans, programs and projects already approved, including environmental control measures and other conditions set in order to request the next licenses that are used to operate the activity.

**Operation Licenses** authorize the operation of the project if the conditions for the previous licenses have been complied with, including environmental control measures. This license will provide new environmental control measures and policies with which the interested party must comply.

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105 It is not uncommon for local and state regulation to provide other types of environmental licenses, such as Environmental License for Expansion or Corrective Environmental License. Names and scopes change according to each regulation.

**Simplified Licenses** are issued at state level before the installation of the project for specific small establishments with low polluting potential. This license has a single phase attesting the environmental viability of the project.

**IMPORTANT:** Licenses for activities that may cause or indeed cause significant degradation of the environment will depend on previous Environmental Impact Assessment and its respective report (EIA/RIMA). Those activities are listed at CONAMA Regulation No. 1/1986, such as mining and power generation.

The EIA/RIMA is a complex procedure demanding time and money. Environmental agencies can require additional types of studies, which could take more time and expenses.

Failure to obtain environmental licenses may lead to costly fines, closure of the establishment and even incarceration of the responsible person.

## 16.3. OTHER ENVIRONMENTAL MATTERS

### i. IBAMA's Federal Technical Registry

When an establishment is involved with activities subject to environmental control, it needs to be registered in IBAMA's Federal Technical Registry – CTF. The activities subject to this registration are listed on IBAMA Regulation No. 6/2017. Federal fees are paid in such situations, and the registered party must also submit annual reports regarding its activities.

### ii. Vegetation Suppression

The Brazilian Forest Act<sup>106</sup> protects some vegetation areas, such as those close to rivers and other water resources (Permanent Preservation Areas - APP) in which the owner, holder or occupant of the land must conserve the vegetation. In case of vegetation suppression of an APP, the owner, holder or occupant of the land is obligated to restore the vegetation. The limits on each APP area are outlined in the federal regulation.

Rural land properties also have to comply with some environmental statutory obligations and keep part of their vegetation untouched as a natural resources preservation area (Reserva Legal). For areas in the Amazon, it means up to 80% (forest areas) or 35% (in cerrado areas). For other areas in the country, 20% of rural lands have to remain untouched.

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106 Federal Law No. 12,651/2012.

Any activity that requires vegetation be cut down depends on authorization from environmental authorities. The authorization may provide compensations for the suppression of green areas and may be included in the environmental license (Preliminary and/or Installation), or issued separately.

### **iii. Conservation Units and National Parks**

Conservation Units and National Parks are protected under environmental legislation. Any activity developed in such areas or in close proximity to them must be carefully analyzed and may not be authorized. If the activities are authorized, there may be compensation obligations or some type of environmental assistance may be required.

### **iv. Waste Management and Disposal**

The National Policy for Waste Management provides that some activities depend on a waste management and disposal. Plan failure to comply with this statutory obligation may give rise to penalties from environmental authorities.

Specific waste with particular polluting properties may be subject to strict regulation regarding their management and disposal (e.g., health system waste).

### **v. Liability**

Environmental liability is strict and joint (if someone contributed to causing damage it will be liable and obligated to repair the damage or offer compensation). Environmental liability is connected to land possession, irrespective of lease agreements or other agreements involving the land.

## 16.4. LICENSES AND PERMITS

In addition to the environmental licenses, public authorities require other licenses for an establishment to operate. The type of license depends on the type of activity and specific characteristics of each asset and project. A few commonly required licenses are in the table below.

License/Certificate	Authority
Business License	Local Public Authorities
Fire Department Inspection Certificate	Local Fire Department
Sanitary License	Local Public Health Authorities (if there are no local authority, state agencies issue the license)
License to Use Dangerous Products	Army, Civil Police Department and/or Federal Police
Authorization to Collect Water	Local Water Department
Authorization for the Modification and Conservation of Historical Buildings and/or Assets	Federal and/or local Authorities for Historical Buildings



# 17. ANTI-CORRUPTION FRAMEWORK

Although Brazilian legislation already punished corruption as a crime, a specific Anti-corruption Framework has been in force since January 2014<sup>107</sup>.

Legislation provides strict liability for all legal entities that practice corruption acts in the administrative and civil fields. The liability of the legal entity does not exclude the individual liability of the company's directors or of anyone who has been involved in any unlawful act.

## **IN CASE OF A COMPANY'S M&A, THE NEW COMPANY MAY REMAIN LIABLE FOR PREVIOUS ACTIONS OF THE FORMER COMPANY IN SOME SPECIFIC CASES.**

In accordance with the Brazilian Anti-corruption Framework, companies doing business in Brazil might be liable for corruption acts against Public Authorities. Regulation also provides that the Company may be liable for corruption even if its agents are the ones performing unlawful activities, especially if they result in any benefit to the Company.

If there is a case against the company for corruption, the existence and implementation of a compliance program will be taken into consideration as a possible extenuating condition. An effective compliance program means fines for corruption may see a decrease of up to 20%.

A compliance program must include mechanisms and procedures: (i) about integrity; (ii) on auditing; (iii) that encourage whistleblowing; (iv) to effectively implement a codes of ethics and conduct; and (v) regarding policies and guidelines to detect and cure deviations, fraud, irregularities and illegal acts against national or foreign public administration. The guidelines for a proper compliance program are provided in regulation and must be complied with:

- Top management commitment to the program;
- Conduct Code applicable to employees and managers;
- Conduct Code applicable to third parties;
- Periodic training in the compliance program;
- Periodic risk analysis in order to perform necessary adjustments in the compliance program;

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107 In 2013, the Federal Government passed the Anti-corruption Law (Federal Law No. 12,846/2014), which went into effect in January 2014. One year later, Decree No. 8,420/2015 was published, providing the regulation to the Federal Law.

- Rules to keep accounting records that fully and accurately reflect the transactions of the Company;
- Internal controls that ensure reliable reports and financial statements are promptly prepared;
- Specific procedures to prevent fraud and illegal acts in bidding processes, in the performance of administrative contracts or in any interaction with the public sector;
- Independence, structure and authority of an internal body responsible for the program's implementation, integrity and enforcement;
- Whistleblower hotlines;
- Disciplinary measures in case of violation of the compliance program;
- Procedures to ensure prompt suspension of irregular activities or in case of violation;
- Timely remediation of damage;
- Appropriate investigation of third-party contracting;
- Analysis during mergers, acquisitions and corporate restructuring, regarding the irregular or unlawful acts or the vulnerabilities in legal entities involved in the transactions;
- Continuous monitoring of the Compliance Program;
- Transparency for donations to candidates and political parties.

Companies that do business with the public sector are more exposed to corruption. Therefore, preventive measures must be in place, to comply with Brazilian anticorruption legislation. There should be a strong compliance program.

# 18. DISPUTE RESOLUTION IN BRAZIL

## 18.1. THE BRAZILIAN JUDICIAL SYSTEM

Brazil has a strong and independent judicial system, complying with international principles such as equality, access to justice, due process of law and adversary proceeding and right to a fair hearing.

The Brazilian judicial system is organized hierarchically, with the Federal Supreme Court at the top. It is responsible for ensuring compliance with the constitutional rules and principles. The Superior Court of Justice (*Superior Tribunal de Justiça* - SCJ) is responsible for the uniform interpretation of nonconstitutional legislation. Below the superior courts, there are the following judiciary structure:

Federal courts		Appreciates, among others, cases involving the federal government, agencies or companies controlled by the federal government, foreign countries, international bodies, matters based on treaty or agreement between the Union and a foreign country or international body
Courts of Special Jurisdiction	Labor Courts	Responsible for appreciating matters between individuals or between workers and employers as groups
	Electoral Courts	Decides upon electoral procedures
	Military Courts	Under which military crimes are analyzed and judged
State Courts		Residual jurisdiction, responsible for matters that are not under the jurisdiction of the other courts

As a rule, the cases begin in the lower courts, in state or federal courts, and may be taken to the higher courts (Courts of Justice or Regional Courts), to SCJ (or other higher specialized courts) and even to SFC, that has the last word in cases involving constitutional matters.

**SCJ is the court in charge of ratifying foreign judgments** – issued either by a judicial court or court of arbitration seated in any country other than Brazil – prior to having it executed in the lower courts in Brazil. This measure is necessary regardless of reciprocity, treaty, or international convention, between the country of origin of the judgement and Brazil.

### **i. International jurisdiction**

With respect to the limits of Brazilian jurisdiction in relation to other jurisdictions, the Code of Civil Procedure makes no distinction between concurrent and exclusive jurisdiction.

The Code of Civil Procedure provides that the Brazilian judicial authority has **sole** jurisdiction **(i)** over cases involving real estate property located in Brazil; **(ii)** to ratify private wills, and to probates' cases involving property located in Brazil – even if the decedent is a foreign citizen and/or is domiciled abroad; and **(iii)** cases regarding dissolution of marriage, when the spouses' assets are, even if only partly, located in Brazil.

For other types of dispute, the jurisdiction of the Brazilian justice system is *concurrent*. In other words, the subject matters may be appreciated by other countries and, if they meet the Brazilian jurisdiction's requirements, they may also be under the Brazilian courts' jurisdiction.

**IN GENERAL, BRAZILIAN COURTS ARE PRESUMED TO HAVE JURISDICTION OVER CASES IN WHICH THE DEFENDANT IS DOMICILED IN BRAZIL, WHEN OBLIGATION UNDER AN AGREEMENT MUST BE PERFORMED HERE OR WHEN THE BASIS FOR THE CASE IS A FACT OR ACT PRACTICED IN BRAZIL.**

The Code of Civil Procedure also provides Brazilian courts have jurisdiction over cases in which the creditor domiciled there, when defendant has any ties to assets in Brazil, when there is a consumer relationship and the consumer is domiciled in the country, and for cases in which the parties choose Brazilian courts' jurisdiction in an agreement.

There is an exception, according to which “*Brazilian courts have no jurisdiction to process and judge cases when an international jurisdiction is exclusively chosen in an international contract*”, and provided that this fact is argued by the defendant in the defense, that is, the courts cannot decide on the lack of jurisdiction issue on of their own accord (*ex officio*).

The case filed before a foreign court does not operate as *lis alibi pendens*, and does not prevent Brazilian courts to appreciate the same matter. Thus, *lis alibi pendens* and *res judicata* are recognized in Brazil only upon ratification of the foreign court's decision by the SCJ.

## ii. Applicable Law

According the *Statute of Introduction to Brazilian Laws* (Introduction Statute)<sup>108</sup>, “to qualify and govern obligations, the law of the country in which they have been constituted will apply”. There is no express provision allowing the parties to choose the law applicable to the contract and the legal relationship between them. The Brazilian judicial branch – on the rare occasions it has had to issue decision on the topic – shows it understands that the Introduction Statute provides a close-ended list and does not allow the parties to choose the forum that will resolve disputes related to contracts between them if the parties choose to set disputes before state courts.

Thus, in principle, Brazilian courts apply Brazilian law to govern and construe the parties' rights and obligations to contracts executed in Brazil or in which part of the obligations are to be performed in Brazil. If, however, the agreement has been executed abroad and there are no obligations to be performed in Brazil, the competent judge should, in theory, apply the law of the country in which the agreement was executed. Proof of applicable foreign law is the parties' burden.

In practice, Brazilian courts – if competent to do so – apply Brazilian laws to the great majority of cases, irrespective of there being any foreign element.

If, however, the parties choose arbitration as the dispute resolution method, the law authorizes the parties to choose the law applicable to the merits of the case and that choice is commonly respected by arbitrators.

## 18.2. ARBITRATION

According to [data released](#) by the International Court of Arbitration of the International Chamber of Commerce, one of the largest and most prestigious arbitral institutions, Brazil is one of the 5 countries that uses its services the most, only behind countries such as the United States and France.

The Arbitration Law<sup>109</sup> applies both to national and international arbitral proceedings in Brazil; therefore, there is no difference regarding which law or legal principles are applicable due to the dispute being international. The only differentiation imposed by law is that arbitral awards issued abroad must go through the ratification process in the SCJ.

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108 Federal Law No. 4,657/1942.

109 Federal Law No. Law 9,307/1996.

## Arbitration clause

Brazilian case law has consolidated the understanding that the arbitration clause binds the parties that agreed to it, and they may not resort to the judiciary to discuss issues related to the contract that contains the arbitration clause. The Arbitration Law provides, by the way, that the so-called “*empty clauses*” or “*pathological clauses*”, that is, those by which the parties agree to refer any disputes to arbitration, without, however, the minimum elements to allow the procedure, may be submitted to the judiciary only so they are supplemented. While some countries tend to consider this type of clause void, Brazilian legislators chose to abide by the parties’ will to use arbitration.

The Arbitration Law allows the parties to **choose the rules applicable to the procedure**, as well as to the merits of the dispute. The parties also may **choose the seat of arbitration** (in Brazil or abroad), as well as the **language** in which the arbitral procedure will be conducted.

The Brazilian judiciary is known for respecting arbitration clauses. If a party to an arbitration agreement files a claim within judicial courts, the judge in charge of the case will often decline its jurisdiction.

## Special matters that may be subjected to arbitration

In 2017, the labor reform provided – though subject to certain requirements and conditions -, that matters involving employees may be resolved by arbitration and there is a growing number of discussion groups that wish to see arbitration used to settle tax disputes.

It is no longer disputable that public entities may use arbitration to settle disputes with private persons, provided that it involves disposable rights. As general rule, all the previous rules for arbitration also applies to the cases with public authorities, in which also there are obligations of publicity and accountability within control entities such as accounting courts.

## Arbitration award

The arbitral award is final and binding upon the parties, and may not be appealed or reviewed by Judicial Courts. If not executed by the parties at their own accord, it is enforceable as if it had been rendered by judicial court, without review of the merits of the dispute.

## Arbitral institutions in Brazil

There are more than 100 arbitral institutions in Brazil (50 of them in the State of São Paulo), among which stand out the Arbitration and Mediation Centre of the Brazil-Canada Chamber of Commerce (“CAM-CCBC”), the AMCHAM’s Arbitration and Mediation Center; CIESP/FIESP Chamber of Conciliation, Mediation and Arbitration, and the Arbitration Chamber of the Market – CAM. In 2017, the International Court of Arbitration of the International Chamber of Commerce (“ICC”), one of the world’s most renowned arbitral institutions, opened a case management office in São Paulo, Brazil, in 2017.

## 18.3. MEDIATION AND OTHER ADR METHODS

The use of mediation and other alternative dispute resolution methods is being encouraged by the judicial branch and, more recently, by the Legislative branch in Brazil<sup>110</sup>. In particular, mediation and **dispute boards** have been growing in public and private agreements.

Mediation Law provides on **mediation** between individuals as a dispute resolution method and on the resolution of disputes by the parties themselves for public administration matters. The Code of Civil Procedure also brought important provisions on the use of the mediation within civil procedure.

Mediation in Brazil follows legislative guidelines on principles by which it is governed, such as impartiality of the mediator, equality between the parties, informality, good faith and confidentiality. Mediation Law also brings provisions about acting as a mediator and training to become one, and general rules about procedures and principles to be complied with in judicial and extrajudicial mediations.

**Dispute boards** have gained ground, especially in infrastructure agreements. Through them, the parties appoint a committee, formed usually by experienced and impartial professionals who will act during the execution of the contracts, to manage and prevent the escalation of disagreements and conflicts.

It was used in the construction of one of the subway lines in the city of São Paulo and in various contracts related to the Olympic Games held in the city of Rio de Janeiro in 2016.

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110 Federal Law No. 13,140/2015.

## 18.4. LITIGATION WITH THE GOVERNMENT

In Brazil there are no specialized courts or court sections to deal exclusively with public authorities' cases. The judicial branch in Brazil is considered the sole and only system, with courts with special jurisdiction for specific matters, such as labor, electoral and military disputes, and to deal with disputes regarding issues of federal interest, as stated above.

### **LITIGATION WITH THE PUBLIC ADMINISTRATION IS SUBJECT TO THE SAME RULES OF JURISDICTION AS ANY OTHER DISPUTE**

If the Federal Government or any of its entities is a party in the dispute, it will be filed in the Federal Courts or, if it regards state or local entities, the case will be under the state Courts' jurisdiction.

Recent Federal regulation<sup>111</sup> encourages the use of alternative dispute resolution mechanisms in Brazil<sup>112</sup>. It established arbitration as the dispute resolution mechanism for conflicts between public authorities and concessionaires of airports, roads and railways. Moreover, it opened the door to other dispute resolution mechanisms in such sectors.

In the city of São Paulo, there is a bill that intends to regulate the use of Dispute Boards in contracts entered into with the City. Bill 577/2017 has been approved by the City Council and awaits only the mayor signing it into law.

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111 Federal Law No. 13,448/2017.

112 More details on arbitration within the government may be seen in the report prepared by [World Bank and FGV](#) university:



# 19. EMPLOYMENT RELATIONS IN BRAZIL

In Brazil, employment relationships are regulated by the Brazilian Constitution, specific legislation, collective agreements, and the Consolidated Labor Laws (CLT), recently amended by Law 13,467/2017.

As provided in CLT, an employee is a person who provides services to an employer on a permanent basis, under the employer's direction, under subordination to the employer, and for compensation.

## Main characteristics of employment relationships in Brazil

Employees must personally provide services and a third party may not provide them on the employee's behalf.

Employees must work on a regular basis, not just occasionally, because employment relationships require a routine practice, and the relationship must be for an undetermined period.

Employees must be subject to the employer's directions.

Employees must receive remuneration for the services provided.

There are different systems, other than employment agreements, under which to hire workers. Most commonly, employers may hire outsourced workers, service providers and self-employed workers:

<b>Outsourced Workers</b>	<ul style="list-style-type: none"> <li>• Until 2017, all practices and judicial claims were decided based on the Brazilian Superior Labor Court's interpretations.</li> <li>• Since November 2017, there are statutory provisions and workers may be hired to work in the contracting party's core activities. In addition, the Brazilian Supreme Court has also decided that companies may outsource their entire process of production, including activities directly related to the corporate object.</li> <li>• Those persons currently working as employees of a company may only be hired as outsourced workers to work for this same company after 18 months as from his/her dismissal.</li> <li>• Companies contracted to provide services are entirely responsible for monitoring, supervising and compensating these workers, as their employer.</li> </ul>
<b>Service providers</b>	<ul style="list-style-type: none"> <li>• Service providers may not be considered employees if the conditions/requirements that would characterize an employment relationship are not present. Those persons currently working as employees may only be hired as service providers after 18 months as from his/her dismissal.</li> </ul>
<b>Self-employed workers</b>	<ul style="list-style-type: none"> <li>• Self-employed workers are not considered employees if they are not under subordinated to the contracting party. Self-employed workers do not need to work under exclusivity; they may work exclusively to one contracting party if he/she decides to do so.</li> </ul>

Brazilian legislation only requires written employment agreements in specific cases (when hiring intermittent employees, for example). However, companies usually execute employment agreements with their employees, as they provide each party's obligations. Collective Bargaining Agreements (CBA) or Collective Bargaining Conventions (CBC) are also applicable to employment relationships.

## **THE TERMS AND CONDITIONS NEGOTIATED IN EMPLOYMENT AGREEMENTS MUST ALWAYS COMPLY WITH THE CLT, THE FEDERAL CONSTITUTION AND THE APPLICABLE COLLECTIVE BARGAINING CONVENTIONS OR AGREEMENTS.**

When an employee's salary is higher than twice the wage cap for the purposes of social security benefits<sup>113</sup> and he/she has at least an undergraduate degree, Brazilian legislation provides them more autonomy and flexibility to negotiate their employment agreement conditions, such as remuneration, bonuses, work hours, duration of break for meals, hour bank, career and salary plan, among others, which may prevail over collective agreements provisions.

Nonetheless, rights related to the employee's health and safety, such as period of vacation and rest, may not be undermined.

The main labor topics that should be taken into consideration when doing business in Brazil are those presented in the table below:

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113 The wage cap for the purposes of social security benefits is R\$ 5,839.45.

<b>Remuneration, Salary and Minimum Wage</b>	<ul style="list-style-type: none"> <li>• Remuneration includes not only employees' salary (that must be paid at least once a month and in Brazilian currency), but also other amounts, such as tips, commissions, statutory rewards, bonuses and wages in kind (i.e., health insurance, life insurance, education, among others)</li> <li>• Since November 2017, the Consolidated Labor Laws have provided that amounts paid as premiums are not part of the employee's remuneration, do not become part of the employment agreement, and are not the tax base for any labor and social security contribution.</li> </ul> <p>Employers pay premiums at their sole discretion to award employees for having performed beyond what is ordinarily expected from them in their activities.</p> <ul style="list-style-type: none"> <li>• Employees may not waive their right to earn a salary and its amount cannot be lowered unless in exceptional situations when it may be negotiated via a CBA.</li> <li>• National minimum wage in 2019: R\$ 998.00. It is possible for local minimum wages to be higher than the national minimum wage.</li> <li>• CBC negotiations between unions also fix each professional category's minimum salary, adjusted every year.</li> <li>• Companies may also offer other raises, for merit or promotion, at their discretion.</li> <li>• Some of the amounts paid to employees are not considered salary, such as stock options and profit sharing. There is specific legislation regulating the matter.</li> </ul>
<b>Work hours</b>	<ul style="list-style-type: none"> <li>• Regular work hours may not exceed 8 hours a day, usually from Monday to Friday, with an hour break for meal and rest (which is not included in the work hours), limited to 44 hours per week.</li> <li>• Employees are also entitled to at least one day of rest per week, preferably Sundays.</li> <li>• To reach the number of weekly work hours, employers may require employees to work on Saturdays, limited to 4 hours, if there is no hour compensation during the week.</li> <li>• Companies with more than 10 employees are required to control and record employees' work hours.</li> <li>• Time spent by the employee on activities other than those required by the employer, such as religious practice, rest, studying, personal hygiene and commuting (even if the work place is at a location where public transportation was unavailable and/or transportation was provided by the employer) are no longer part of the work hours</li> <li>• It is possible to negotiate 12-hour shifts followed by 36 hours of rest via a CBC or CBA, and individual agreements.</li> <li>• If employees only work during part of the rest and meal break, the employer must pay for the time actually worked.</li> </ul> <p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"> <li>• Companies may negotiate the compensation of work hours directly with employees, and the intervention of labor unions on negotiations is not necessary as long as the compensation occurs in the same month. Regarding the hour bank system, it is possible to negotiate directly with the employees, for compensation limited to six months. The hour bank may be annual if negotiated with unions.</li> </ul> <p><b>Overtime:</b></p> <ul style="list-style-type: none"> <li>• CLT allows employees to work overtime, provided work hours do not exceed 10 hours a day.</li> <li>• Overtime (hours beyond 8 work hours per day) is paid a 150% rate of the regular hour, at least. The rate may be higher, depending on the provisions of the applicable CBC and/or CBA.</li> </ul>

## Vacation and Leave of Absence

- Employees accrue 30 days of vacation every 12 months of work. Vacation accrued must be taken within the following 12 months, preferably all at once. The 30-day vacation may be split into 3 periods. One of them may not be shorter than 14 consecutive days, and the other 2 may not be shorter than 5 consecutive days each.
- Vacation may not begin in the 2 days before holidays or rest days.
- CLT provides 120 days of maternity leave. An optional government program called “Citizen Company” allows it to be increased to six months to participating companies only. During the **maternity leave**, the salary continues to be paid by the employer, which is reimbursed by the Social Security Administration.
- **Paternity leave** is also granted by law. It is 5 days long, according to CLT, and 20 days long in the Citizen Company program.
- Employees receive vacation pay increased by one third of the monthly salary.

## Employment Agreement Termination

### Fixed-term agreements

- **Expiration** (regular termination). Employees are entitled to receive their salary, 13th salary, vacation pay increased by 1/3 vacation (provided in the Federal Constitution), *pro rata* vacation pay and amounts in the Guarantee Fund for Length of Services (FGTS).
- **Early termination initiated by the employer or the employee.** Employees are entitled to receive salary, 13th salary, vacation pay increased by 1/3, *pro rata* vacation pay and FGTS.

### IMPORTANT:

- The party that initiates the termination of a fixed-term agreement shall pay to the other Party an indemnification equivalent to half of the outstanding salary amounts the employee would receive for the time remaining in the agreement were it not terminated. Nonetheless, this indemnification is not due if the agreement provides a special clause that assures to both Parties the right to an early termination.

### Indefinite term

#### • Without cause:

- When employees unilaterally decide to terminate the employment agreement they are entitled to receive salary, 13th salary, vacation pay increased by 1/3, *pro rata* vacation pay and FGTS.
- When employers unilaterally decide to terminate the employment agreement, employees receive their /her severance pay, which is their salary, prior notice of termination amounts, 13th salary, vacation pay increased by 1/3, *pro rata* vacation pay and FGTS plus a 40% penalty.

#### • For cause:

- On grounds of employee misconduct, he/she is entitled to receive his/her salary and vacation pay increased by 1/3;
- On grounds of employer misconduct, the employee is entitled to receive the same severance pay due when the employment agreement termination is initiated by the employer.

- **Termination by mutual agreement.** This form of termination is provided in legislation since November 2017 and entitles employees to receive half of the amount due for prior notice of termination (if indemnified), half of the amount for indemnification for termination (20% of FGTS amount), 13th salary, vacation increased by 1/3, and *pro rata* vacation pay. The employee may withdraw only 80% of the amount deposited on FGTS account).

### IMPORTANT:

- Employers may not dismiss tenured employees - such as union leaders, women during pregnancy and on maternity leave, and employees absent from work due to occupational disease work-related injuries -, except for gross misconduct.

<b>FGTS</b>	<ul style="list-style-type: none"> <li>• Employers must make a monthly deposit in an account managed by a federal bank (Caixa Econômica Federal) for each of their employees in an amount equivalent to 8% of the salary earned by the employee. Employees may only withdraw these funds under special circumstances provided by law, such as dismissal without cause, expiration of the fixed-term employment agreement, retirement, purchase of real estate property, severe disease in its terminal stage or death.</li> <li>• In the event of termination without cause, employers are required to pay a penalty equivalent to 40% of the balance in this account, which will go to the employee, plus an additional of 10% that will go to the federal government.</li> </ul>
<b>Social Security and additional contributions</b>	<ul style="list-style-type: none"> <li>• Employers and employees are required to pay monthly social security contributions that will go towards retirement pension, sickness and accident or disability compensation, maternity leave, family allowance, among other social benefits.</li> <li>• Employers are required to make monthly contributions at a rate of 20% of each employee's monthly payroll and employees at rates that range from 8% to 11%, depending on the salary earned. This amount is withheld by the employer directly on payroll.</li> </ul>
<b>Unions</b>	<ul style="list-style-type: none"> <li>• There are two types of unions: those representing: (i) the economic activity (employers) and (ii) the professional category (employees).</li> <li>• Only one union may represent a certain economic activity or professional category. Employer and employees do not choose which union will represent them. Rather, the union is determined according to the company's main economic activity and the employee's professional category, and the employment location.</li> <li>• Employers' unions and trade unions may negotiate collective agreements. All obligations provided under these CBCs are binding upon all parties, and have legal and practical effects on employment agreements.</li> <li>• Payment of union dues, provided for in the Consolidated Labor Laws, has become optional since November 2017.</li> <li>• Payment of other union dues provided in CBCs is only mandatory for union's members.</li> <li>• On March 1 2019, Provisional Presidential Decree 873 ("PPD 873") amended articles 578 and 579 of the Consolidation of Labor Laws to establish that all union dues will be paid and collected to unions of all categories, subject to voluntary, individual and express (written) authorization of the employees, in a signed document delivered to the union and to employers.</li> <li>• There can be no collection of union dues without such authorization, even if authorized in collective regulation, general meeting or the union's bylaws, making null rules or normative clauses in this sense.</li> <li>• The collection of union dues and other optional contributions or monthly fees will be made exclusively by an invoice issued by banks or electronic equivalent, and withholding them from payroll will be prohibited, as had been the practice until then.</li> <li>• PPD 873/19 took effect from the date of its publication on March 3 and remains in force until April 29. If it does not become law after that period, it will no longer be effective.</li> </ul>

# 20. REAL ESTATE ASPECTS

In Brazil, real estate matters are mostly regulated by the Law No. 10,406/2002, known as the Brazilian Civil Code, and other specific Federal laws such as the Public Registry Law No. 6,015/1973, the Real Estate Development Law No. 4,591/1964 and 6,766/1979, as well as Law No. 8,245/1991 that disciplines the lease of urban real estate properties and the Rural Land Act No. 4,504/1964.

## 20.1. ACQUISITION AND TRANSFER OF A REAL ESTATE

Pursuant to Brazilian laws, the acquisition of the ownership of a real estate property only occurs upon the registration of the title with the relevant local Register of Deeds. Every real estate property corresponds to one title.

The updated property title is essential to verify the good standing of the property in relation to the ownership status and the existence of security interests, encumbrances and/or liens, mortgages, leases, rights of enjoyment and possession rights that might affect the rights over the relevant property.

**IT IS RECOMMENDED THAT INVESTORS REVIEW THE UPDATED PROPERTY TITLE BEFORE ENTERING INTO ANY REAL ESTATE TRANSACTION.**

As a general rule, the creation, acquisition, disposal and transfer of real estate properties (e.g, purchase and sale, swap transactions, mortgage) is implemented by means of the execution of a public deed before a Notary Office<sup>114</sup>. The public deed is a formality required by most of the acts involving real estate properties and the Public Notary is the relevant authority entitled to formalize the public deed<sup>115</sup>.

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114 The transfer/acquisition of a real estate property by way of increase of corporate capital does not require a public deed. In this case, the relevant corporate instrument (e.g. charter documents, amendment of the bylaws, minutes etc.) will be the document required to transfer/acquire the property before the real estate registry.

115 Drafting a public deed requires the payment of fees to the relevant Notary Office.

After the execution of the public deed before a Notary Office, the deed should be recorded in the property title before the local Register of Deeds Office<sup>116</sup>.

If the public deed is not recorded before the relevant Register of Deeds, the act is binding between the contracting parties, which means, in other words, that only records in the property title ensure that the real estate act may be enforced over third parties.

## 20.2. GUARANTEES

The most common forms of guarantees over real estate properties in Brazil are mortgages and the fiduciary transfer of title of real estate property<sup>117</sup>.

**Mortgage.** The rules and procedures relating to the constitution of mortgages over real estate properties are given by the Brazilian Civil Code. Mortgages are generally formalized by a public deed<sup>118</sup> and have to be recorded in the property title to exist, be valid and ensure enforceability against third parties. As long as that debtor is complying with the obligation(s) secured by the mortgage, the debtor is allowed not only to keep the possession of the property but also to implement the constitution of subordinate mortgages over the same property and even sell it. If there is a subordinate mortgage over the same asset, the first creditor will have priority when executing the guarantee and in case of disposal, the mortgage will remain attached to the property.

**Fiduciary transfer of title as a security.** The rules and procedures relating to the fiduciary transfer of title of a real estate property are in Federal Law 9,514/1997. The fiduciary transfer of title as a security is usually formalized by a private instrument and have to be registered in the real estate title to exist, be valid and ensure enforceability against third parties. If debtor is complying with the secured obligation(s), debtor is allowed to keep possession of the property, but cannot dispose or transfer possession of the property without creditor's consent. It is important to mention that when the fiduciary transfer of title is implemented, creditor is granted with the solvable, reversible ownership of the property and debtor remains with direct possession and the right to recover the full ownership of property in case the secured obligation is fulfilled. It is not possible to constitute more than one fiduciary transfer over the same property.

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116 Recording the public deed (or corporate instrument) requires the payment of fees to the Real Estate Registry Office.

117 Known in Brazil as '*Alienação fiduciária em garantia*'.

118 As an exception, when the creditor is a bank or financial institution regularly operating the mortgage can be formalized by a private instrument, which shall be registered with the Real Estate Office to be valid and ensure enforceability against third parties.

## 20.3. LEASE OF URBAN REAL ESTATE PROPERTIES FOR COMMERCIAL PURPOSES

Lease Law (No. 8,245/1991) regulates the urban residential and non-residential leases, together with Brazilian Civil Code, which sets forth the formalities, rights and duties of the parties in relation to the lease of other types of properties.

Lease agreements are usually formalized through private instruments signed by the parties (Tenant and Landlord) and such instrument can be recorded in the property title in some occasions for purposes of ensuring the right of first refusal on the acquisition of the property in the event of transfer to third parties, as well as granting effectiveness to the lease agreement, if agreed by the parties.

**IT IS STRONGLY RECOMMENDED THAT THE LEASE AGREEMENT BE RECORDED IN THE PROPERTY TITLE WITH THE REGISTER OF DEEDS, IN ORDER TO ENFORCE THE LEASE BEFORE ANY THIRD PARTY THAT MAY ACQUIRE THE PROPERTY OF THE REAL ESTATE ASSET.**

## 20.4. LEASE OF RURAL REAL ESTATE PROPERTIES

Law No. 4,504/1964<sup>119</sup> regulates rural leases, together with Decree No. 59,566/1966, which sets forth the formalities, rights and duties of the parties in relation to the lease of rural properties.

Rural lease agreements are usually formalized through private instruments signed by the relevant parties (Lessee and Landlord), in which the Landlord assigns to Lessee the use and enjoyment of rural property, for the purpose of agriculture, livestock, agribusiness, extractive or mixed exploitation, by means of the payment of a rent.

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119 Known in Brazil as “*Estatuto da Terra*”.



## 20.5. ACQUISITION OR LEASE OF RURAL PROPERTIES BY FOREIGNERS

The acquisition or lease of rural properties in Brazil by foreign legal entities (even if authorized to operate in Brazil) is subject to restrictions<sup>120</sup>. Such restrictions shall also apply on the acquisition of rural properties by a Brazilian legal entity in which any foreign company or natural person holds a majority of the capital stock at any title<sup>121</sup>.

In view of such restriction, foreign entities or Brazilian entities controlled by foreigners shall only be allowed to purchase, receive as payment in kind, acquire by means of execution of real estate guarantees and/or hold title of rural properties by any means if such acquisition is approved by several Governmental bodies, including Ministries and the Congress.

In view of the above, companies interest in investing in businesses involving rural properties in Brazil must consider the restrictions on the acquisition or lease of rural properties for purposes of implementing the transaction.

## 20.6. EXPROPRIATION RIGHT AND PUBLIC EASEMENT

According to Decree No. 3,365/1941, the Government has the right to expropriate real estate property to execute a public service, as provided by law or agreement, upon authorization, permission or concession. Public Authorities are also allowed to empower public services concessionaries with expropriation rights, which shall observe legal procedures and limits.

Expropriations may be carried out based on public necessity, public utility or social interest, which must be declared by law and the completion of the procedure depends of the payment of a fair and prior indemnification to the expropriated party (i.e., the owner). If the property owner does not agree with the indemnification amount offered by the Public Administration (or the Concessionary of Public services), then the expropriated party is allowed to discuss the indemnification before the Courts.

Along with expropriation rights, Brazilian legislation also confers to the Government (or the Concessionary of public services) the power to constitute public easements over third-parties real estate properties. Public easements are commonly used in those situations that the infrastructure project requires the use of a portion of several real estate properties, such as the installation of a transmission line.

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120 According to Federal Law 5,709/1971, Decree No. 74,965/1974 and the Opinion No 01/2008 of the Federal Attorney General (AGU) from August 19<sup>th</sup>, 2010.

121 According to the Brazil's Federal Attorney General, the wording "majority of its capital stock" contained in the legislation shall be understood as "direct or indirect corporate control" over the relevant Brazilian company.

By Law, public easement is a real estate right on third-party property based on a statement of public utility, and also the payment of a fair and prior indemnification, which authorizes the Government (or Concessionary of public services) to use such property for executing works and public services of collective interest. The institution of public easement shall observe the same procedure for expropriation of real estate property. However, unlike expropriation, the public easement does not remove the property from the owner's estate, but only creates the right of using the property or part of it.

# 21. ANTITRUST REGULATION

## 21.1. RULING AND SUBMISSION CASES

Under current Brazilian Antitrust Law<sup>122</sup>, transactions that meet objective criteria<sup>123</sup> need prior approvals. The Brazilian Antitrust Authority (CADE) reviews deals and monitors activities in competition matters.

According to Brazilian antitrust laws and regulations, consortiums, joint ventures, associative agreements<sup>124</sup>, acquisition of assets, companies, or even shares/membership interest, are considered a transaction subject to antitrust control in Brazil. Therefore, if other criteria for filing exist, the transaction must be submitted to antitrust review prior to closing.

### **ACCORDING TO BRAZILIAN ANTITRUST LAWS, PARTNERSHIPS FORMED TO PARTICIPATE IN PUBLIC BIDDING PROCESSES ARE NOT SUBJECT TO THE ANTITRUST AUTHORITY'S CONTROL.**

A transaction is subject to filing if there is at least one of the groups involved had a total gross income or a total volume of business in Brazil in its last fiscal year above R\$ 750,000,000.00, and that at least another involved group presented a total gross income or a total volume of business in Brazil in its last fiscal year equivalent to or above R\$ 75,000,000.00. In such case, the transaction must be submitted to CADE's approval prior to its being closed, under penalty of all acts performed in breach of this rule being declared void and subject to a fine ranging from R\$ 60,000.00 to R\$ 60,000,000.00 (gun jumping penalties).

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122 Law No. 12,529/2011.

123 Regulation provides that all transactions subject to its analysis held until May 28, 2012 are subject to the provisions of Federal Law No. 8,884/1994, and transactions held after then are governed by Federal Law No. 12,529/2011.

124 CADE has provided rules to identify association agreements by publishing Resolution No. 10/2014, revoke by Resolution No. 17/2016. According to this regulation, association agreements are those with a long partnership (equal or more than two years), entered into competitors and which provisions set forth an agreement for risk and profit sharing. Agreements that have a shorter duration are considered an association agreements when the parties decide to extend their partnership beyond two years. For more information on the subject, see Concentration Act No. 08700,002529/2017-39 (TAM Linhas Aéreas S.A – LATAM and Qatar Airways Q.C.S.C) and the Consultation No. 08700,006858/2016-78 (Hamburg Südamerikanische Dampfschiffahrts-Gesellschaft KG and Hapag-Lloyd AG).

According to Brazilian antitrust legislation, companies are part of the same economic group: (i) if they are subject to common control (corporate control, including shared control and participation equal or above 20% ), and (ii) if they are entities in which any company subject to common control holds an indirect or direct share of at least 20%. If there are funds in the group: (i) the corporate group of each member that holds, directly or indirectly, 50% or more of the units of ownership regarding the shares of the fund involved in the transaction, by participating individually or by any share agreement; (ii) companies controlled by the fund involved in the operation; and (iii) companies in which the referred fund detains, directly or indirectly, 20% or more of the shares/units of ownership of the corporate capital or voting capital.

Once the need to submit the transaction to an antitrust review is defined, the next step is to understand which antitrust review procedure CADE will use to analyze the transaction.

Fast track procedure	Ordinary procedure
<ul style="list-style-type: none"> <li>• Short filing form</li> <li>• Disclose less information</li> <li>• We estimate approximately 45 days for the prior approval of the deal (i.e. filing, publishing the concentration act, analysis by CADE, publishing the approval, without restrictions), if there are no further requests from CADE or from interested third parties</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed filing form</li> <li>• More information disclosed</li> <li>• Even though in simple cases CADE analysis lasts approximately 90 days, Brazilian legislation provides that the review may be as long as 240 days as from the filing, and CADE's longest analysis period has taken 330 day because of postponement requests by the parties or by CADE's tribunal.</li> </ul>

The parties involved in any transaction that require CADE's approval are free to determine when to submit it to CADE, as long as they do not complete their deal and their operations continue separately, without any integration that may cause CADE to understand that the parties are actually operating jointly before the transaction is approved.

Filing of the Concentration Act preferably happens after the first binding documents are executed, but necessarily before the transaction can be completed (fully or partly) and the competition relationship between the involved parties can change.

## **THERE IS A R\$ 85,000.00 FILING FEE FOR CADE TO REVIEW A TRANSACTION.**

**IMPORTANT:** The Brazilian Antitrust Authority may require the submission of concentration acts that do not meet the abovementioned criteria within one (1) year from the date when the transaction is concluded if, at its discretion, they understand the acts are relevant and may negatively affect competition. In this case, if the authorities do not approve the transaction, the concentration that had already been completed will have to be undone.

### **i. Permission to complete the transaction without prior consent**

Applicants may request permission from CADE to complete the transaction without its definitive prior consent if the following conditions are met: (i) there are no risks of irreparable damage to competition, (ii) the transaction can be reversed, and (iii) substantial and irreversible financial losses are imminent for the acquired company if the authorization is not granted. If according to CADE, all required information has been provided, a decision will be issued within 60 days as from its submission authorizing or not the completion of the deal without previous analysis. If approved, the parties have to ensure the transaction can be reversed<sup>125</sup>.

## **21.2. PARTIES' CONDUCT DURING REVIEW**

During CADE's analysis, it is essential that the parties maintain their operations independent under the risk of gun jumping that may result in penalties for breaching CADE's rules, the transaction being declared void, and subjecting the parties to a heavy fine.

The following are examples of terms that could be contractually agreed upon between the parties and that might not give rise to gun-jumping discussions: the parties may undertake (i) not to perform acts outside of their normal course of business or in line with their past practices, (ii) pay dividends and/or interest on equity, (iii) execute long-term agreements without the other party's consent.

The following are examples of acts that CADE may see as an attempt of the parties to anticipate the effects of the deal before CADE's approval: (i) appointing members to the administrative bodies of the target company, (ii) merging their operational structures; (iii) transferring assets to each other, or (iv) influencing each other in a manner that alters their competitive conditions<sup>126</sup>.

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125 CADE has already granted permission to complete a transaction prior to its issuing a prior consent. See Concentration Act No. 08700,007756/2017-51 (Excelente B. V., Rio de Janeiro Aeroportos S/A and Concessionária Aeroporto Rio de Janeiro S/A). The whole process was completed in eight (8) days.

126 Additional information about gun jumping practices may be found in [CADE's guide](#) for submission of concentration acts and in CADE's decisions. See, for example, Concentration Act No. 08700,005775/2013-19 (OGX Petróleo e Gás and Petróleo Brasileiro S.A.); Concentration Act No. 08700,010394/2014-32 (Goiás Verde Alimentos Ltda., Brasfrigo Alimentos Ltda. and Brasfrigo S/A); and Concentration Act No. 08700,000137/2015-73 (GNL Gemini Comercialização e Logística de Gás Ltda. and Companhia de Gás de Minas Gerais).

# CREDITS

## TEAM FIESP

### Department of Infrastructure

Carlos Cavalcanti  
Emb. Maria Celina Rodrigues  
Gustavo G. Borges  
Silvia C. Dias  
Maria do Carmo F. Almeida  
Lucas F. Simone  
Renata M. Sena  
Maurílio M. Freire  
Bruna Leal

## GRAPHIC PROJECT

### Graphic designer

Maria Regina Knoll  
João Carlos Heleno

### Infographics

Daniel das Neves

## TEAM MADRONA

Rosane M. Lohbauer  
Igor N. de Souza  
Danilo H. Pereira  
Marcelo C. Said  
João Carlos E. Toledo  
Eduardo S. Tristão  
Priscilla C. Carbone  
Rodrigo S. Barata  
Fernanda O. Silva  
Douglas A. Cordeiro  
Luis Carlos B. Junior  
Felipe R. Medaglia  
Isabela S. Ribeiro  
Fernando B. Gallacci  
Izabel D. Assis  
Natasha Rosset  
Fernanda D. Ferraz  
Felipe L. Vaz Lobo  
Ione Y. de Moraes

## TEAM ALVAREZ & MARSAL

Rafael Eguti  
Marcos Ganut  
Carlos Alberto Priolli  
George Fernandes

