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### Brazil infrastructure market study



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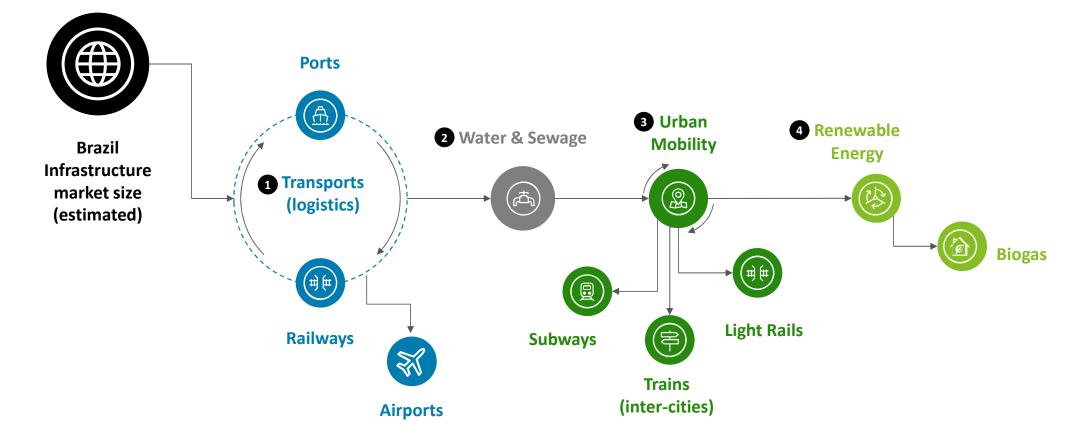
January 2023

### 上下水道セクター 市場調査 エグゼクティブサマリ

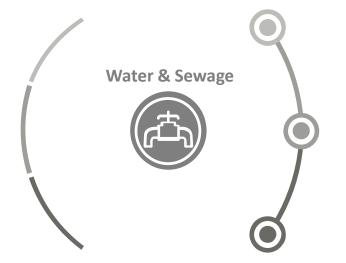
ハイライト情報

市場規模	2020年の上下水道トータルでの市場規模は724億BRLに達しており、 過去10年間のCAGRは8.41%で推移している。
普及率	上下水道の普及率はブラジル全土で向上している。しかし、下水道の普及率は、特にブラジル北部で低い水準にとど まっており、地方によってバラつきのある状況である。
規制の状況	2000年にANA (Nacional Water Agency)が水資源に関する国家政策を実施するために設立され、規制当 局としての権限を与えられて以降、相次いで関連する法律や規制が施行され、ブラジルの上下水道を取り巻く環境の 改善に寄与している。
投資の状況	2020年には137億BRLが投資され、過去10年間の投資額の年平均成長率は5.6%であった。これらの投資は、自 己資金、有償、非有償の資金という3つのソースからもたらされます。自己資金とは、特に地元のプロバイダーからの再 投資に関連するものを指す。有償は、CAIXAやBNDESなどの政府系銀行からの融資や資金調達に関連するものを 指す。非有償は、連邦、州、自治体のいずれかの政府からの投資で返金が求められないものを指す。

**General Overview** 



Water & Sewage

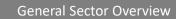




Sanitation – Water & Sewage – Agenda





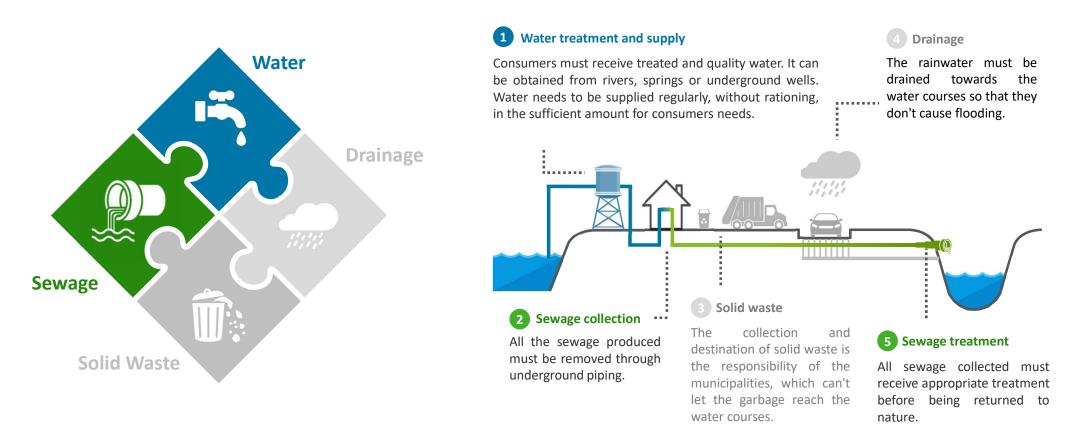


Public Value Chain and Regulation

Sanitation – Water & Sewage – Agenda



The sanitation market covers the water supply, sewage system, solid waste collection and drainage system. This study will focus on the first two.

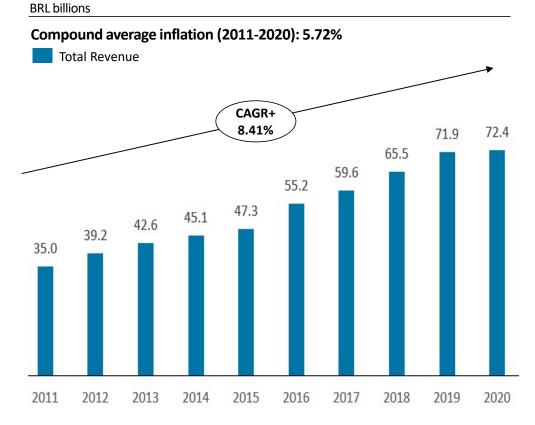


Source: SNIS/Deloitte Analysis

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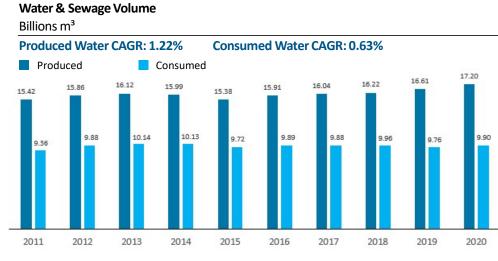
Market Size - The water and sewage total market size in 2020 reached BRL 72.4 billion and has been growing a CAGR of 8.41% over the last decade.

#### Total operational revenue



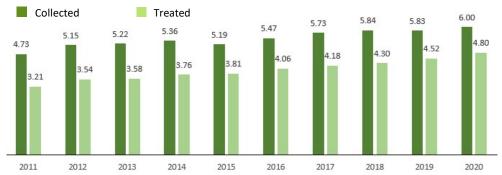
Notes: 1) Other services provided that may be related to water or sewage. Source: SNIS 2020/Deloitte Analysis

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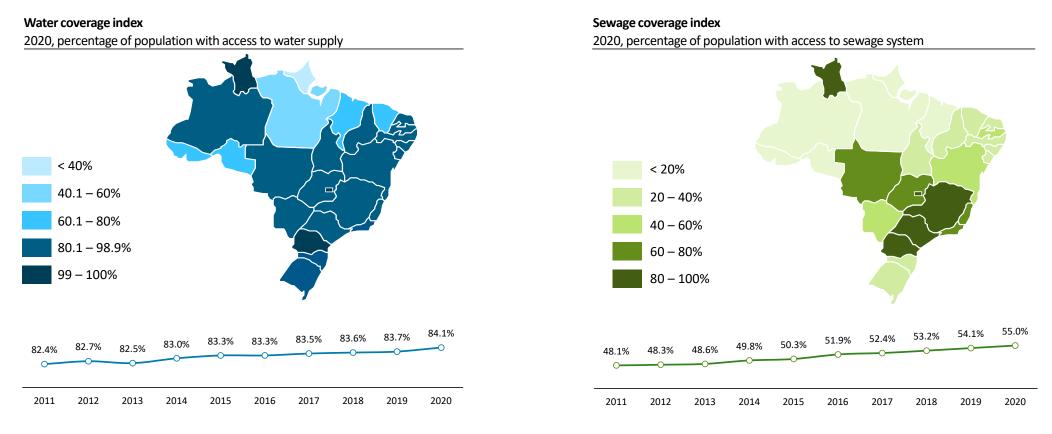
#### Collected Sewage CAGR: 2.69%

Treated Sewage CAGR: 4.58%





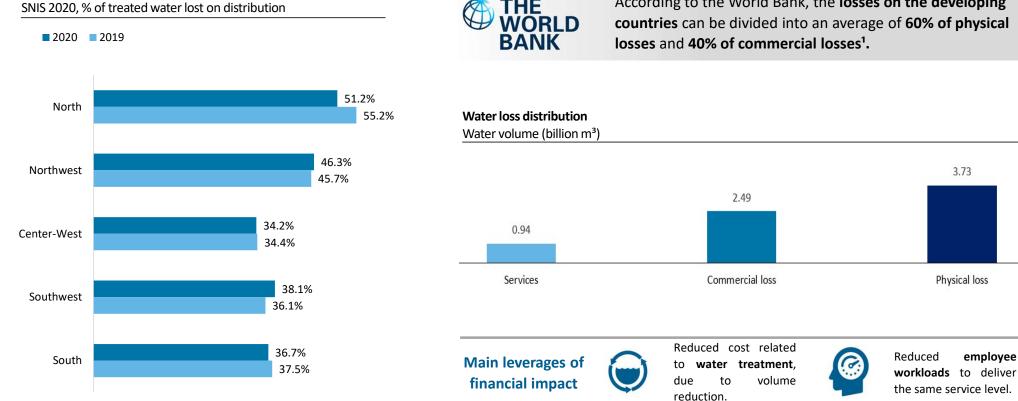
Water and sewage coverage - Due to regulatory efforts, water coverage indexes became more distributed across the country. However, the sewage coverage indexes remained at low levels, especially in the Northern part of Brazil and still has space for improvements in the whole country.



Sources: SNIS 2020/Deloitte Analysis

Water commercial losses - Brazil has lost around 40% of the produced water, 7 billions m<sup>3</sup> of water that weren't consumed nor billed in 2020.

#### Losses of water on distribution



Notes: 1) Physical losses comprehends losses of water due to leaking. Commercial losses comprehend non-authorized uses and errors on measures. Source: SNIS/ Trata Brasil/ Deloitte Analysis

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According to the World Bank, the losses on the developing countries can be divided into an average of 60% of physical

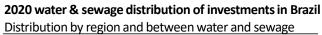


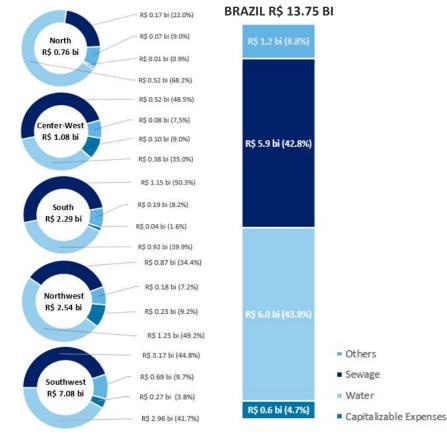
Investment on water & sewage – In 2020, BRL 13.7 billions was invested and over the last decade, the CAGR of investments was 5.6%.

Those investments come from three sources: own resources, onerous and non-onerous. Own resources are related to reinvestments from local providers, among others. Onerous are related to loans and fundings from governmental banks, such as CAIXA and BNDES. Non-onerous are investments from the government either Federal, State or Municipality and not refundable.

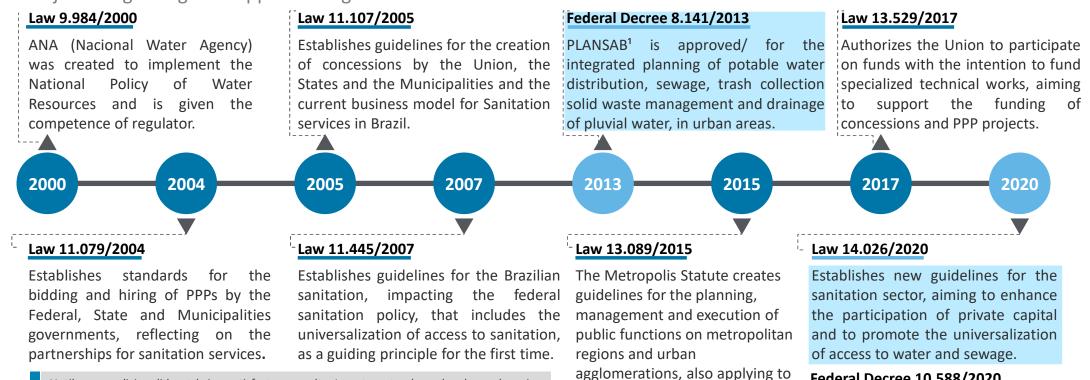
- The amount invested in 2020 was R\$ 13.75 billions, 12.59% lower than 2019, which was 15.73 billions;
- The CAGR of the amount invested over 10 years is 5.63%;
- The Southwest and Northwest region are the ones with larger sanitation investment and better access and distribution for the public;
- On the other hand, the North region is the one with less investments and, in consequence, poor access, especially to sewage services.







Regulatory Environment - On the last couple of decades, laws were issued shaping the governance and aiming a better distribution and guality of services for the Brazilian population, therefore, only with the new regulatory framework did major changes began to appear on sight.



#### Federal Decree 10.588/2020

Determines federal investments on the new framework, not completely regulating the law.

capital. Rogério Tavares, VP of IR at Aegea

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Until now, policies did not bring satisfactory results. Investment volume has been dropping

and service coverage levels are growing incrementally, nothing significant. The new legal

framework comes to change that, to enable investments and bring participation of private

Sources: Brazilian Government, Mayer Brown, Clifford Chance, International Bar Association, Saneamento Ambiental Magazine Oct/2020, Deloitte Analysis 14

the regional sanitation unities.

Notes: 1) PLANSAB - National Plan of Sanitation

Sources: Brazilian Federal Government, Deloitte

Analysis

The new regulatory framework for sanitation - Law 14.026/2020 - To foment investments in the sanitation market, in July 2020, the Law 14.026/2020 was signed, presenting a new framework shaped to enhance competitiveness and service level, by setting up a much more favorable scenario for private companies to enter the market.

Market regulations and centralized governance standards	Regionalization of contracts and service level improvement	Competition and private capital incentive
<ul> <li>Brazilian National Water Agency (ANA) will be responsible for establishing standards<sup>1</sup> and regulatory guidelines to be followed by state and municipalities' regulatory agencies, that nowadays can have different mechanisms and guidelines;</li> <li>The Inter Ministry Committee on Basic Sanitation (CISB)<sup>2</sup> will be responsible to ensure the implementation of the basic sanitation policy and will also coordinate allocation of financial resources.</li> </ul>	<ul> <li>States shall create clusters from groups of cities<sup>3</sup> to make unified bids for the serving companies, making underdeveloped areas more attractive to the investors by joining them with areas with more advanced sanitation systems;</li> <li>Clusters will have priority over individualized cities on the deliberation of financing for projects and allocation of resources;</li> <li>All active contracts shall be adjusted until March 2022 to include sanitation goals, aiming the universalization of access.</li> </ul>	<ul> <li>The bidding process will be mandatory, implying the end of "program contracts", that allowed government-owned companies to serve locations without bidding processes;</li> <li>The new framework allows government- owned and mixed companied to be privatized, keeping the concession areas of their active contracts;</li> <li>Also, private companies will be allowed to compete with government-owned companies on bids.</li> </ul>

**Companies will have to prove their technical and financial capability** to develop the sanitation system on the targeted area according to ANA's guidelines and the sanitation development goals stated by the 2013 National Sanitation Plan ("Plano Nacional de Saneamento Básico - Plansab")<sup>4.</sup>

Source: Brazilian Government/ Mayer Brown/ Clifford Chance/ International Bar Association/ Saneamento Ambiental Magazine Oct/2020/ Deloitte Analysis © 2022. For information, contact Deloitte Touche Tohmatsu Limited.

Notes: 1) ANA will be responsible for sanitation quality and efficiency standards, tariff regulation of public sanitation services, the reuse of treated effluents and more; 2) CISB was created by the law 4162/2019 and will be chaired by the Ministry of Regional Development; 3) The Law 14.026/2020 defines that, if the states are not able to deliver the region clusterization until June/2021, the Federal Government will define it ; 4) 99% of the population with access to potable water and 90% to sanitation infrastructure by 2033.



The new regulatory framework for sanitation - Water loss reduction - The new regulations includes the reduction of losses as a guiding principle and a *sine qua non* condition for the concession's arrangements and their perpetuality, driving a reduction of losses that can be sized up to BRL 87 billions, from 2020 to 2034.



Art. 2°

Reduction and control of water losses as one of the sanitation principles.

#### <u>Art. 10°-A</u>

**Need of targets** for treated water losses reduction on the distribution, as **necessary conditions for the validity of contracts**.

#### 1 Art 11°

Companies must **fulfill the contractual targets** on at least 3 out of 5 consecutive years. The **non-compliance** with targets will trigger an **administrative procedure** by the **regulatory agency** to determine actions to be taken, including **sanctioning measures** and the **end of the concession**.

#### <u> Аrt 23°</u>

**Subnational regulatory agencies** must create, under ANA's guidelines, their own **progressive reduction and control of water loss guidelines**, to be followed by companies under concession at their actuation areas.

#### 🕞 <u>Art 48</u>°

Progressive reduction and control of water losses included as **guideline for Union's sanitation policies**.

Notes: 1) The scenarios building, and the financial analysis of impact were conducted by Trata Brasil.

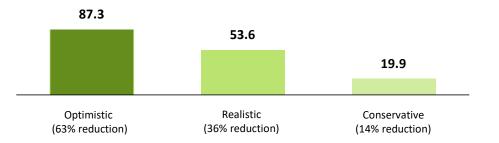
Source: Federal Government of Brazil/Trata Brasil/ Deloitte Analysis

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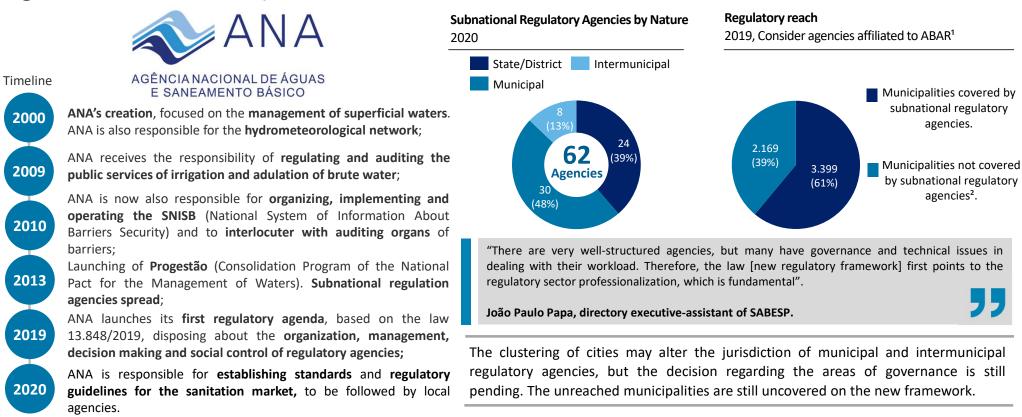
#### Scenarios over the reduction of water losses in Brazil<sup>1</sup> BRI thousands

Scenarios	2020 Losses	2034 Losses	Reduction	Total Gross Profit	Total Net Profit
Optimistic	41%	15%	63%	87,294,828	43,647,414
Realistic	41%	25%	39%	53,580,183	26,790,091
Conservative	41%	35%	14%	19,865,538	9,932,769

**Total gain due to water loss reduction between 2020 and 2034** BRL billions



Challenges of the regulatory environment in the sanitation market - ANA is a relatively new regulatory agency, with a growing scope of action and a new challenge: being the sanitation system regulator, dealing with numerous local regulators of different maturity levels.



Notes: 1) 57 out of 62 agencies are affiliated to ABAR. Alagoas state agency is the only state agency not affiliated; 2) The regulation is not mandatory, but it uniformizes the service level of sanitation.

Source: ANA/ABAR/ Saneamento Ambiental Magazine Oct/2020/ Deloitte Analysis

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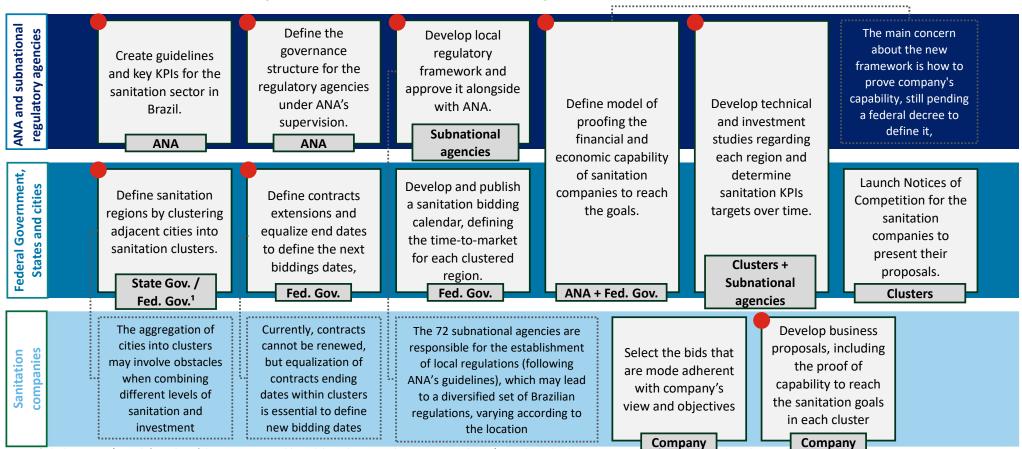
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Next steps to make the new framework successful – There are still some regimenting decrees and initiatives pending that still must be carried out by ANA, federal, state, and municipalities, to assure the new model effectiveness.

Legend

Most critical steps to make the new

framework successful.



Notes: 1) The law 14.026/2020 defines that, if the states are not able to deliver the region clusterization until June/2021, the Federal Government will define it. Bana is the only state that delivered the clusterization.

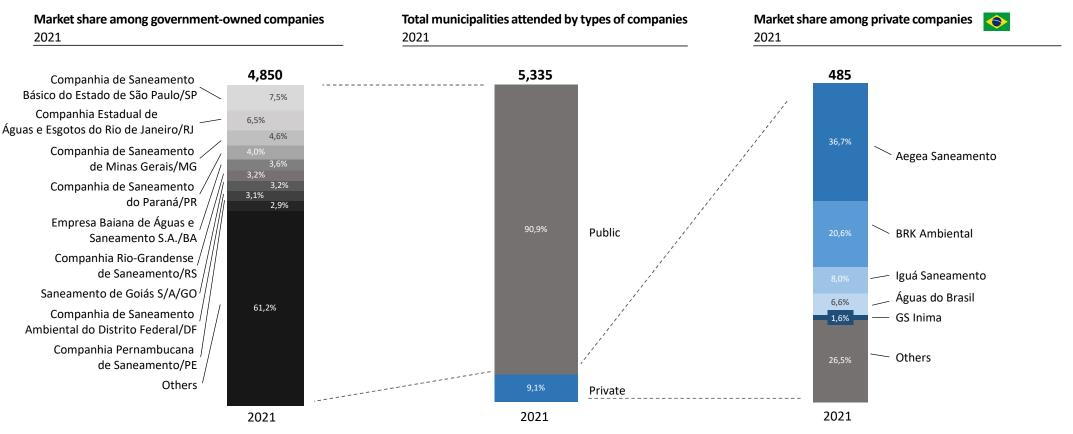
Source: Deloitte Analysis

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# Main Players

### **Main Players**

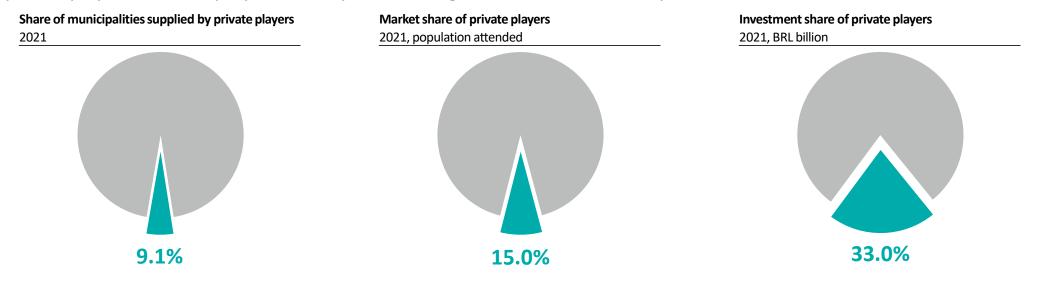
Current participation of private companies - The government-owned companies dominate 90.9% of the market, while 5 private companies represent around 73.5% out of the total 9.1% they represent in the overall market.



Sources: SNIS 2022, ABCON/SINDCON, Deloitte Analysis

### **Main Players**

Share of investments of private companies - Although private players represent only 9.1% of the market in terms of municipalities attended, their investments account to 33.0% of the total investments in the sector, which indicates that private players invest disproportionately more than government-owned companies.



There are some reasons that might explain why private companies level of investments are higher than government-owned companies:

- The contracts of program signed between state companies and the granting authority, most of the time without defined goals and with inadequate regulatory quality, prevented investments in sanitation from being stimulated;
- The possibility of accessing non-refundable resources from the Federal Government's PAC budget for the construction of sanitation infrastructure, meant that the majority of municipalities did not seek sustainable options for investments, operation and maintenance of services;
- The severe fiscal crisis of states and municipalities limited the public sector's investment capacity in sanitation. Besides, government-owned companies are subject to governmental purchases rules, which make the investment process more time-consuming;
- According to data from SNIS 2021, between 2012 and 2021 government-owned companies presented personnel expenses per employee 1.75x higher than private companies.

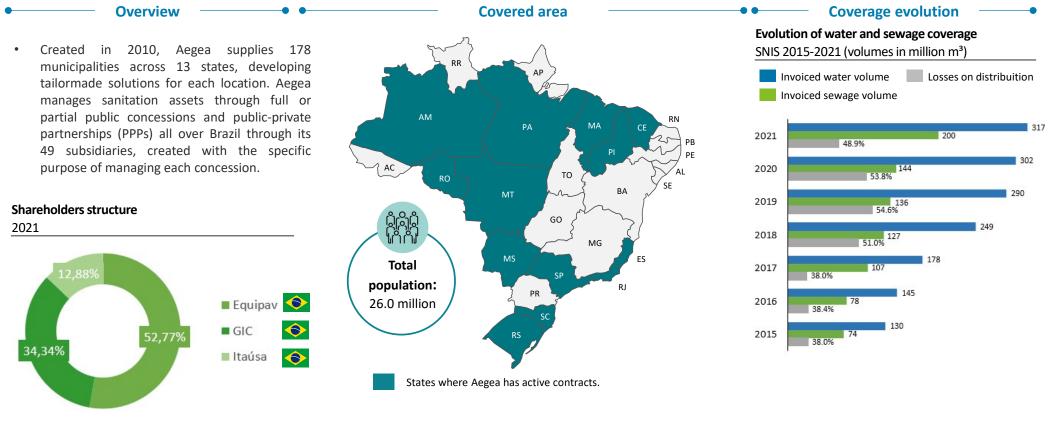
Sources: SNIS 2022, ABCON/SINDCON, Deloitte Analysis

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# Aegea

### Aegea - Company overview

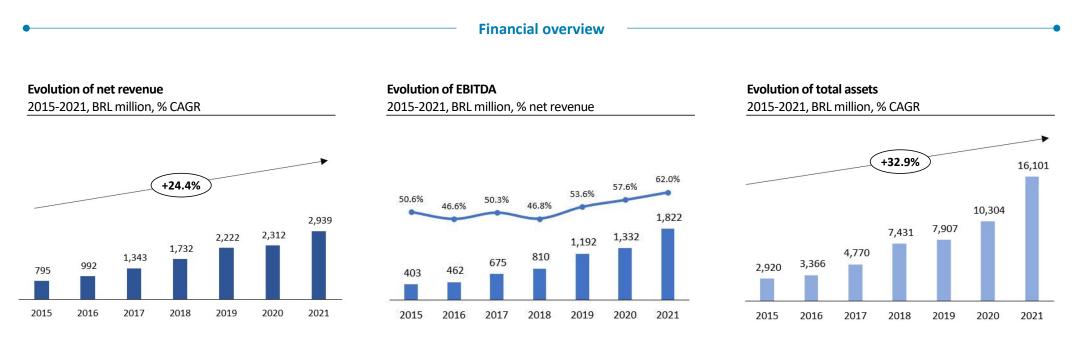
Aegea, the main private player in Brazil, is consistently growing, but also facing a challenge to prevent losses on water distribution from increasing.



Sources: SNIS, Aegea website, Deloitte Analysis

### **Aegea - Financials**

Aegea presents a consistent investment on assets since 2015 and its results are shown by the highest EBTDA margin of the last 6 years.

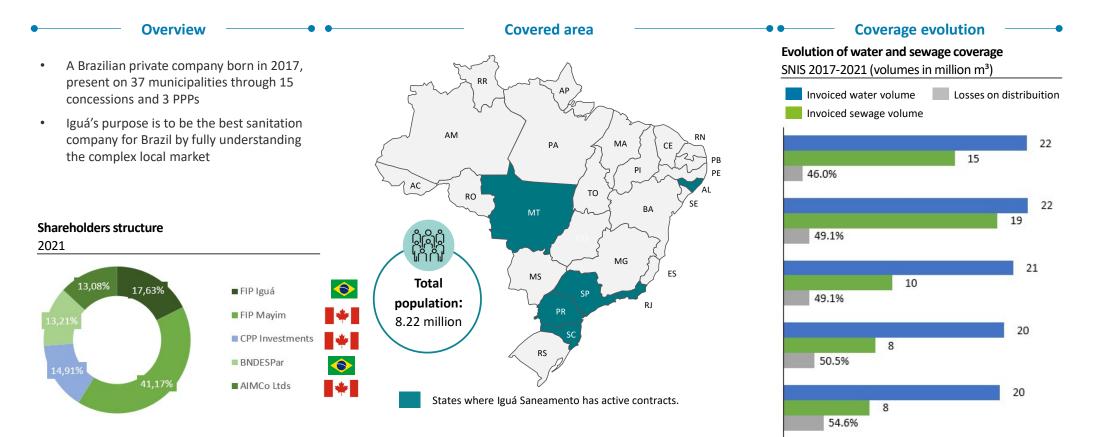


Sources: Aegea website, Deloitte Analysis

# Iguá Saneamento

### Iguá Saneamento - Company overview

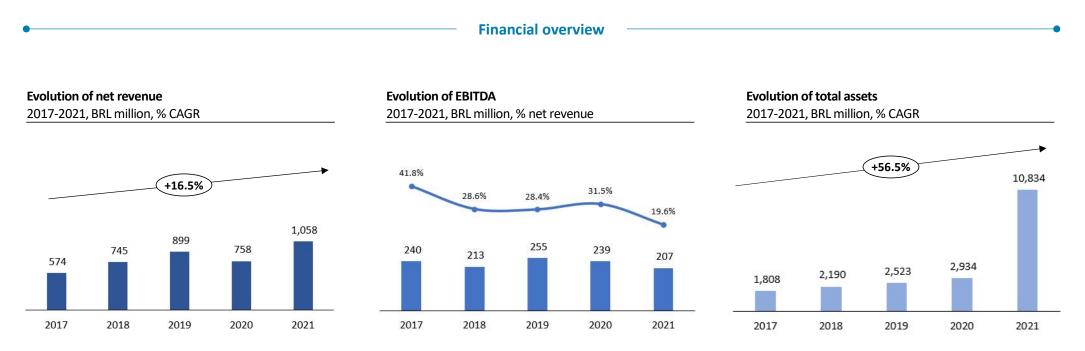
Since 2017, Iguá got concessions and PPPs in 6 states, serving up to 8.22 million citizens and has been increasingly growing the invoiced water and sewage volumes, facing the challenge of reducing high losses on distribution.



Sources: SNIS, Iguá Saneamento website, Deloitte Analysis

### Iguá Saneamento - Financials

Iguá had a consistent growth since it was created. However it is facing the reduction on the return on invested capital due to the increase of the capital expenditures.

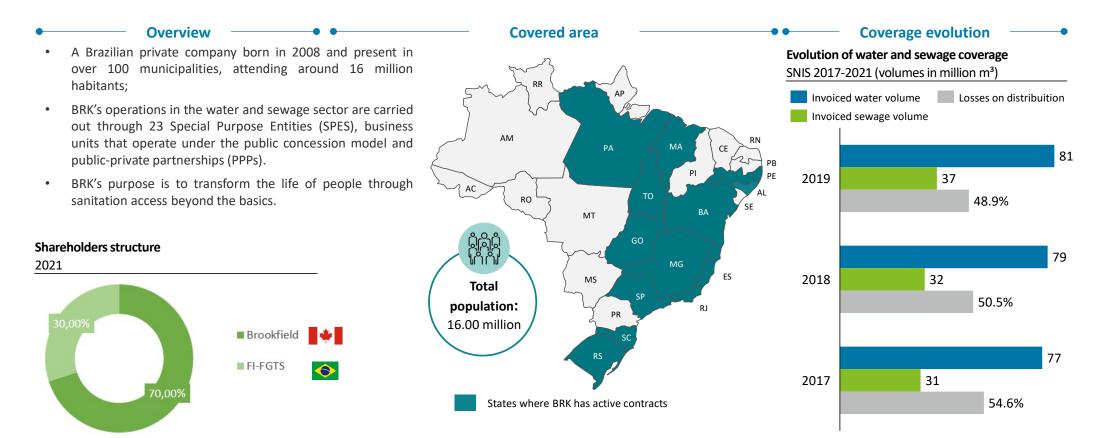


Sources: Iguá Saneamento website, Deloitte Analysis

### BRK

### **BRK - Company overview**

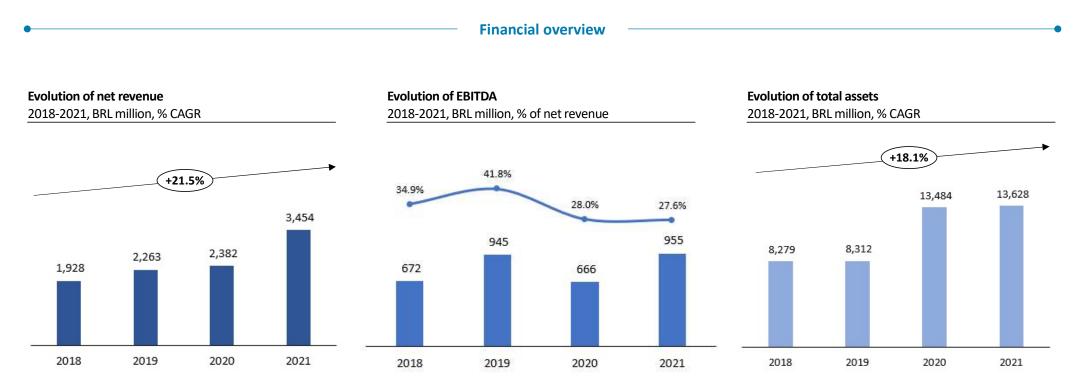
BRK is one of biggest companies on the water and sewage market. It operates through concessions and PPPs partnerships, complementing public investments for the universalization of sanitation in Brazil.



Sources: SNIS, BRK website, Deloitte Analysis

### **BRK - Financials**

BRK became one of the five largest players in the water and sewage market in 2020 and the return of its investment came by 2021, also shown by the increased EBITDA compared to 2020.

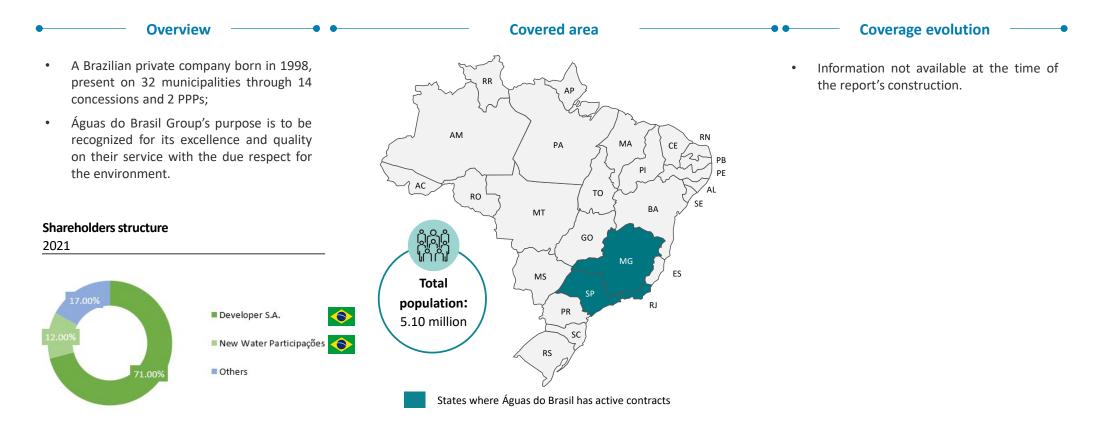


Sources: Iguá Saneamento website, Deloitte Analysis

# Águas do Brasil Group

### Águas do Brasil Group - Company overview

The Águas do Brasil Group is one of the biggest players on the water and sewage market, attending multiple cities in São Paulo, Rio de Janeiro and Minas Gerais totalizing 32 municipalities.

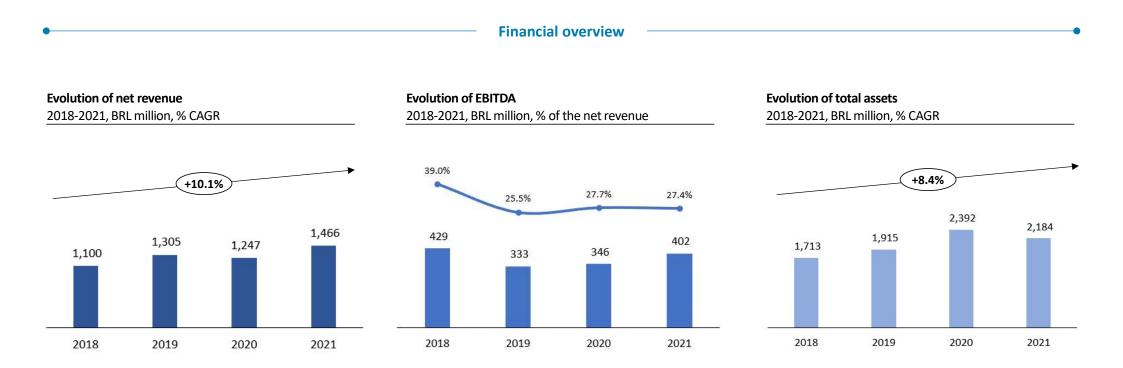


Sources: SNIS, Águas do Brasil website, Deloitte Analysis

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### Águas do Brasil Group - Financials

Águas do Brasil is in constant development and won the Rio de Janeiro (section 3) bidding on December 29, 2021.

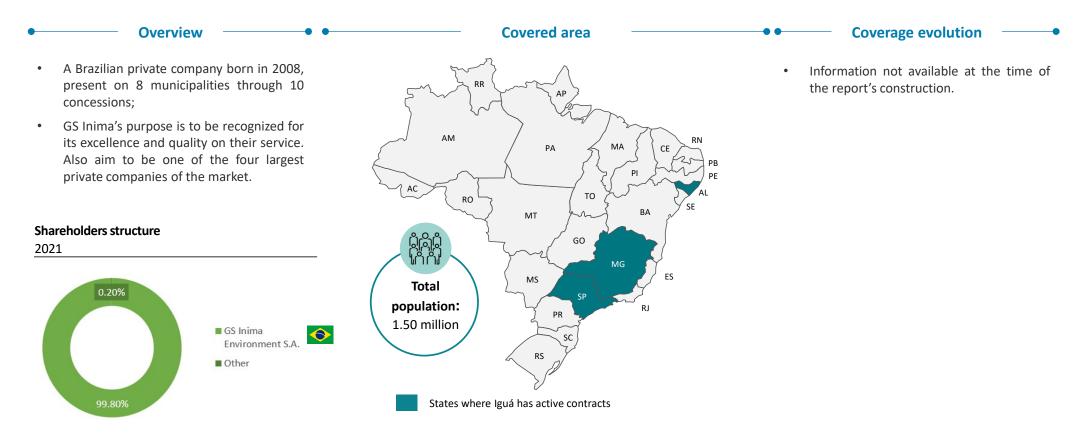


Sources: Iguá Saneamento website, Deloitte Analysis

## GS Inima Brasil

### **GS Inima Brasil - Company overview**

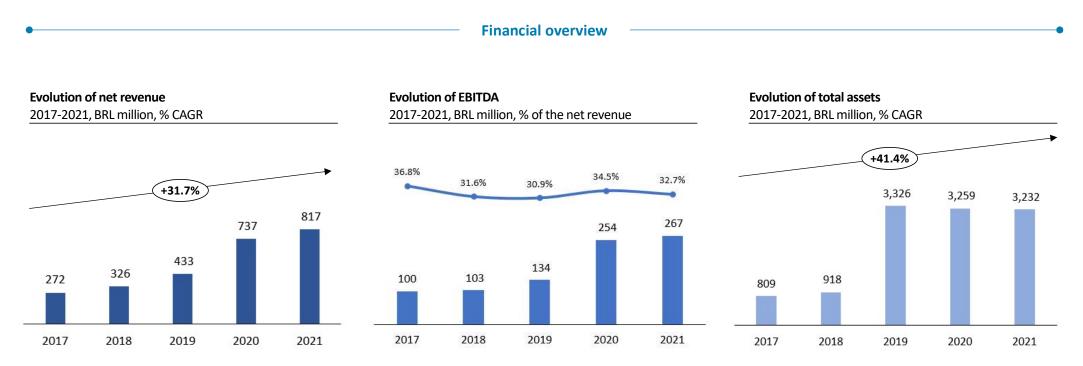
The GS Inima group is a consolidated player worldwide and it is part of the Brazilian water and sewage market since 2008.



Sources: SNIS, GS Inima website, Deloitte Analysis

### **GS Inima Brasil - Financials**

The GS Inima group is growing fast and presents the highest CAGR between the five largest companies of the water and sewage market.



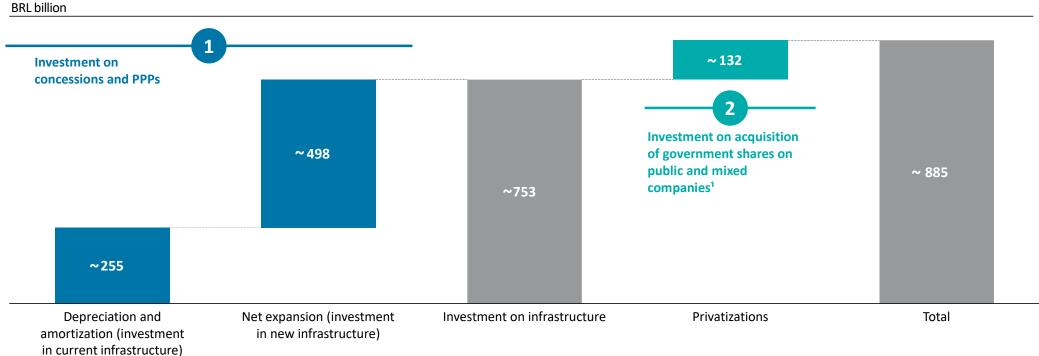
Sources: Iguá Saneamento website, Deloitte Analysis

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# Main Projects Portfolio

### **Main Projects Portfolio**

Investment opportunities - There is a BRL 885 billion investment opportunity in the water and sanitation market until 2033, out of which BRL 255 billion would be invested on current infrastructure, BRL 498 billion on new infrastructure and BRL 132 billion on privatizations.



Total potential investment opportunities until 2033

Sources: ABCON. Deloitte Analysis

Note: 1) The total investment on privatizations is an estimation of the value of the main public and mixed companies' values, but the privatized companies and the acquisition values may vary

### **Main Projects Portfolio**

Previous and Future Biddings - Until 2023, it is expected approximately 24.5 billions from biddings in the water & sewage market.

#### Previous biddings since the new regulation mark<sup>1</sup>

Quantity	Bidding	Date (mm/dd/yyyy)	Duration (years)	Investments (R\$ billions)	Population (millions)	Municipalities
	Alagoas/AL (Section A) - Water					
1	and Sewage	09/30/2020	35	2,600	2	13
2	Cariacica e Viana/ES - Sewage	10/20/2020	30	1,300	0	1
3	Mato Grosso do Sul/MS – Sewage	10/23/2020	30	3,800	2	68
4	Ipameri/GO - Water and Sewage Rio de de Janeiro/RJ (Sections 1,	12/04/2020	30	95	0	1
5	2 e 4) – Water and Sewage Buriti Alegre/GO - Water and	04/30/2021	35	27,000	11	29
6	Sewage	06/09/2021	30	26	0	1
7	Amapá/AP - Water and Sewage Xique-xique/BA - Water and	09/02/2021	35	3,000	1	16
8	Sewage Alagoas/AL (Section B e C) -	12/06/2021	30	700	0	1
9	Water and Sewage Rio de Janeiro/RJ (Section 3) -	12/13/2021	35	2,900	1	61
10	Water and Sewage Dois Irmãos do Tocantins/TO –	12/29/2021	35	4,700	3	20
11	Water	12/03/2021	30	98	0	1
12	Orlândia/SP - Water and Sewage São Simão/GO – Water, Sewage	02/07/2022	35	93	0	1
13	and Solid Waste	02/11/2022	35	49	0	1
14	Crato/CE - Water and Sewage	02/11/2022	35	248	0	1
15	Potim/SP - Water and Sewage Rosário Oeste/MT - Water and	03/24/2022	35	46	0	1
16	Sewage	03/30/2022	30	41	0	1
Total				46,696	20	217

<sup>1</sup> The New Regulation mark is detailed on page 13 (Law 14,026/2020).

Sources: ABCON/SINDCON, Deloitte Analysis

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#### Future biddings until 2023

State	Bidding	Estimated Investment (R\$)		
Bahia	Brumado - water and sewage	142.83 million	67.20 thousand	
Ceará	Ceará - sewage	7.04 billion	4.23 million	
Espirito Santo	Espírito Santo - reuse	130.00 million	n/a	
Goiás	Jaraguá - water and sewage	82.89 million	50.51 thousand	
Maranhão	Açailândia - water and sewage	To be defined	112.45 thousand	
	Brasnorte - water and sewage	To be defined	19.70 thousand	
Mato Grosso	Campo Novo do Parecis - water and sewage	586.64 million	35.36 thousand	
	Extrema - water and sewage	274.52 million	36.23 thousand	
Minas Gerais	Nepomuceno - water and sewage	71.72 million	26.88 thousand	
	Santa Maria de Itabira - water and sewage	To be defined	10.85 thousand	
Pará	Pau D'Arco - water and sewage	23.33 million	5.48 thousand	
Paraíba	Paraíba - water and sewage	6.00 billion	2.29 million	
Piauí	Floriano - water and sewage	102.23 million	59.94 thousand	
Rio Grande do Norte	São Gonçalo do Amarante - sewage	To be defined	44.00 thousand	
	Erechim - water and sewage	362.03 million	105.86 thousand	
Rio Grande do Sul	Porto Alegre - water and sewage	2.17 billion	1.50 million	
	Rio Grande do Sul - water and sewage	4.00 billion	2.40 million	
	Rondônia - sewage	To be defined	1.50 million	
	Cerejeiras - water and sewage	47.65 million	16.32 thousand	
Rondônia	Espigão D'Oeste - water and sewage	83.00 million	32.37 thousand	
KUIIUUIIId	Porto Velho - water and sewage	2.30 billion	529.54 thousand	
	São Miguel do Guaporé - water and sewage	47.25 million	23.01 thousand	
	São Francisco do Guaporé - water and sewage	49.95 million	20.27 thousand	
Santa Catarina	Palhoça - water and sewage	904.68 million	171.80 thousand	
	Capivari de Baixo - water and sewage	To be defined	27.87 thousand	
Tocantins	São Domingos da Araguaia - water and sewage	29.43 million	25.56 thousand	
Sergipe	Sergipe - water and sewage	To be defined	2.30 million	
Alagoas	Alagoas (Section D) - water and sewage	To be defined	645.00 thousand	
Total		24.5 hillions	16 29 millions	

24.5 billions 16.29 millions

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