

Metropolitan Region of Maceió (State of Alagoas) Sanitation Project

April 2020

The logo for BNDES (Banco Nacional de Desenvolvimento Econômico e Social) is displayed in white on a green rectangular background. It consists of a stylized house icon followed by the letters "BNDES".

BNDES



Schedule

1. Context
2. Project overview
3. Engineering studies
4. Financial modeling
5. Legal aspects
6. Interdependence agreement
7. Performance indicators



DISCLAIMER

The conclusions presented here result from quantitative and qualitative data analysis, and future events projections, as part of the expectations of the State of Alagoas, of Casal and their advisors, at the time of this analysis. Such future events may not occur and results presented may differ from the actual numbers.

The use of different sources of information and the application of different data processing methodologies can result in differences between the content of this presentation and that of documents with the same object of this document.

Information in this presentation is for reference only, as it may undergo changes and should in no way be considered as binding information on future concessions that may be auctioned.

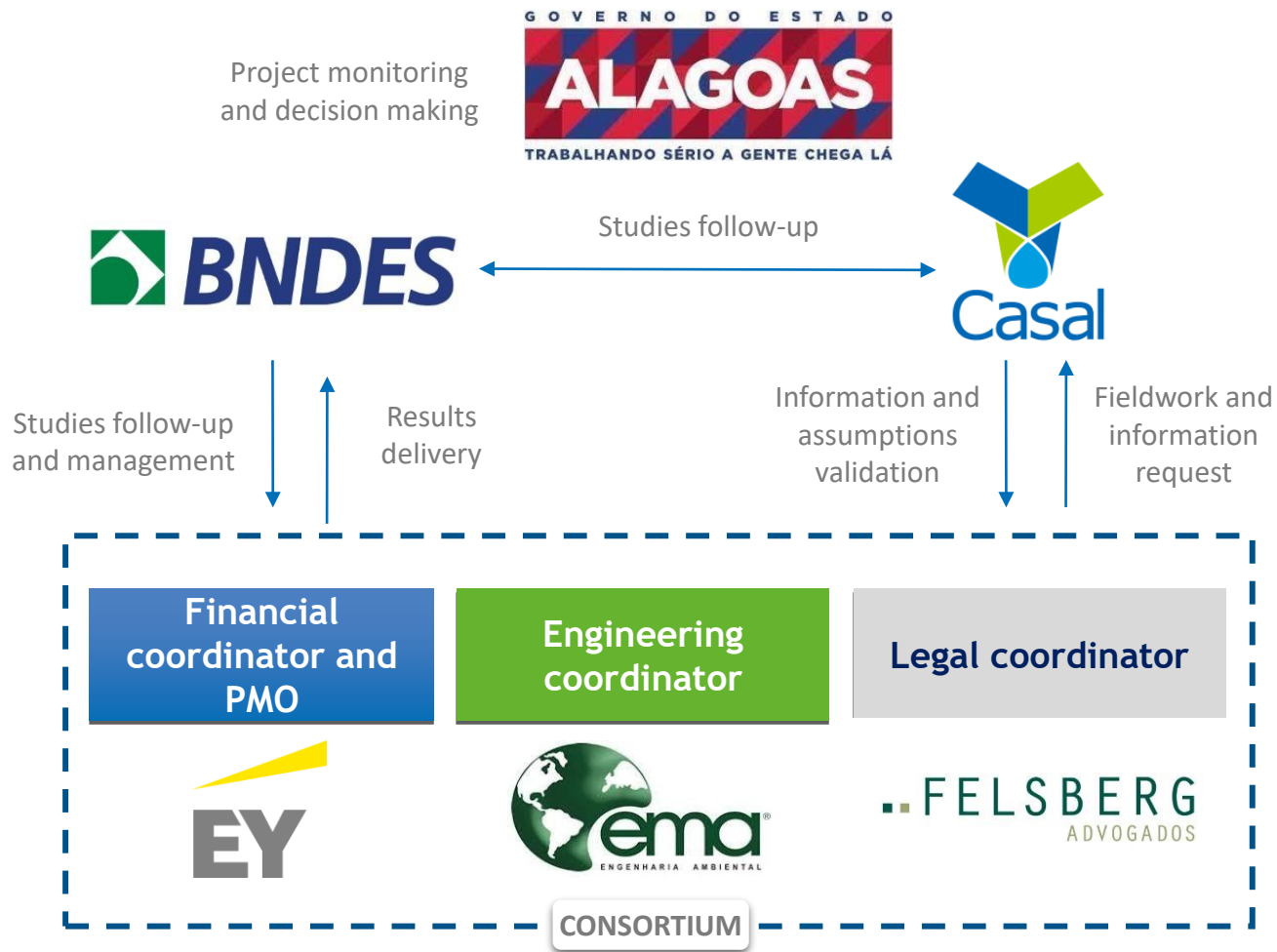
Context // Governance

5/2/2017

A contract was signed between the State of Alagoas and BNDES governing the Bank's remuneration and reimbursement of its expenses with third parties.

5/30/2017

BNDES hired the consortium EY/Felsberg/Muzzi/Ema to structure the project for the expansion of the private participation in the State sewage management.





Overview

Overview // Casal



The Alagoas Water and Sewage Company, a mixed economy (state and private participation) founded in 1962 and related to the Secretariat of Infrastructure, **currently serves 77 of the 102 municipalities** in the State with basic sanitation services.



POPULATION SERVED IN ALAGOAS BY CASAL (SAAEs EXCLUDED)

- ▶ Water: 1,859,795 inhab. – 55,1%*
- ▶ Sewage: 369,251 inhab. – 10,9%*



ACTIVE ECONOMY

- ▶ Water: 466,149
- ▶ Sewage: 108,239



NETWORK EXTENSION

- ▶ Water: 5,240 km
- ▶ Sewage: 564 km
- ▶ Distribution Loss Index: 58.8%



EMPLOYEES (CASAL – Dec. 2018)

- ▶ 1,024 people



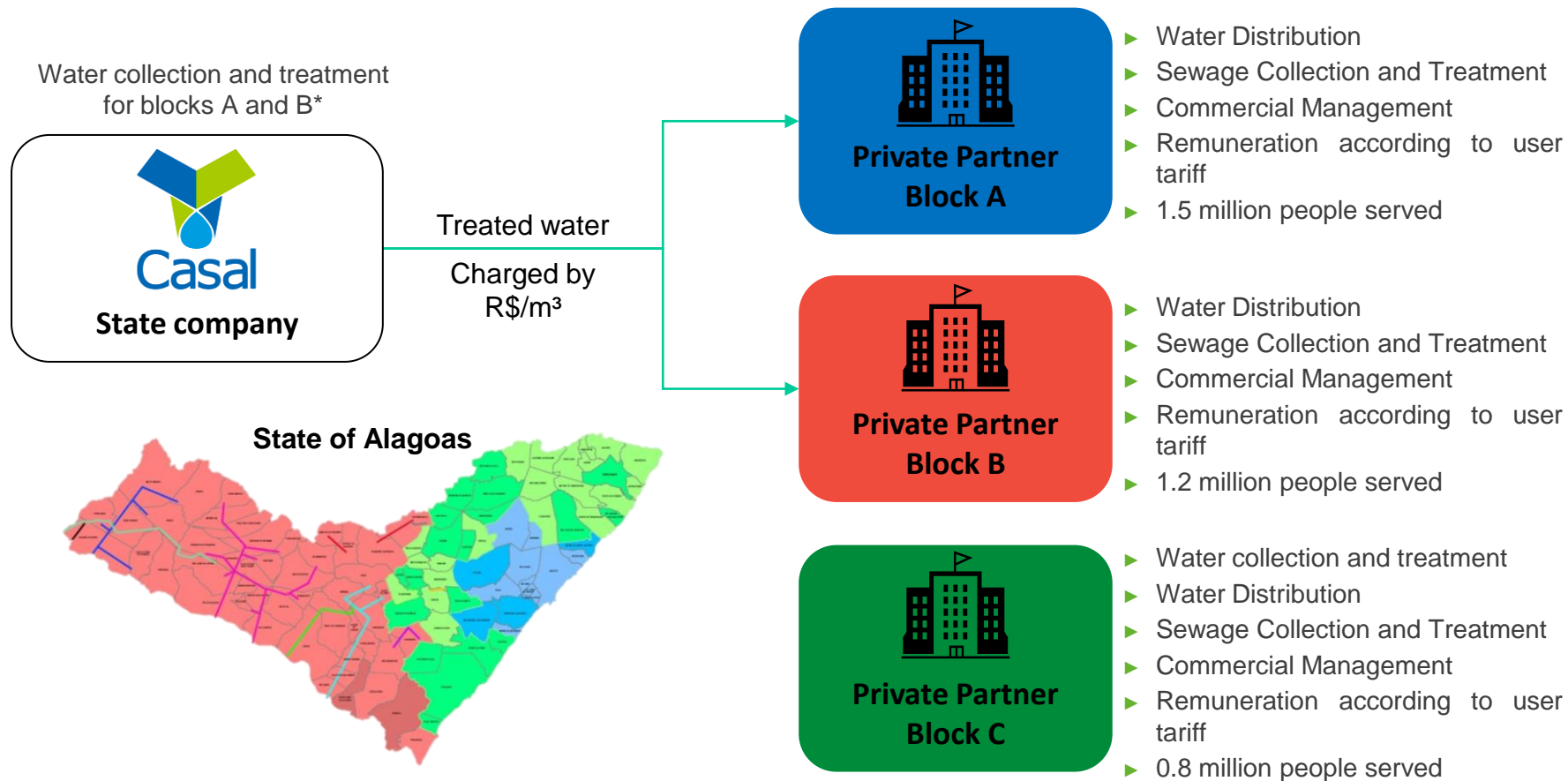
FINANCIAL DATA

- ▶ Total operating revenue: R\$ 466.2 million
- ▶ Investment: R\$ 27.7 million
- ▶ Average practiced tariff: R\$ 5.41/m³

(The highest of all northeast state-owned companies)



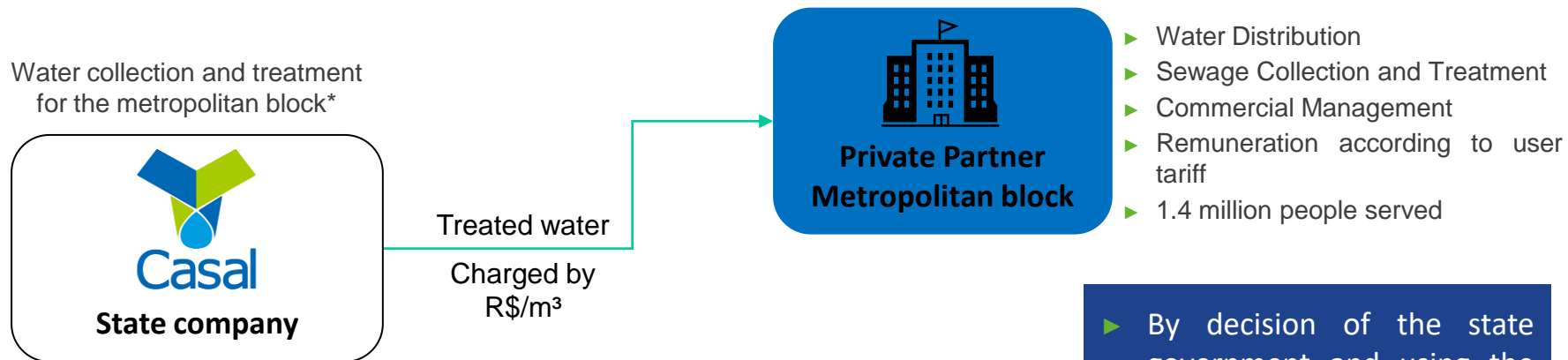
Overview // Project business model



* Only in the municipalities where Casal already operates. The concessionaire shall provide all sanitation services to the existing SAAEs

SAAEs = Water Supply and Sewage System

Overview // Project business model



Metropolitan block municipalities

- ▶ Atalaia (SAAE)
- ▶ Barra de Santo Antônio (SAAE)
- ▶ Barra de São Miguel
- ▶ Coqueiro Seco
- ▶ Maceió
- ▶ Marechal Deodoro (SAAE)
- ▶ Messias
- ▶ Murici
- ▶ Paripueira
- ▶ Pilar
- ▶ Rio Largo
- ▶ Santa Luzia do Norte
- ▶ Satuba

- ▶ By decision of the state government and using the concept of Metropolitan Region (RMM), at first, only the metropolitan block will be subjected to a bidding process.
- ▶ In the future, the remaining blocks may be awarded using studies already structured.

* Only in the municipalities where Casal already operates. The concessionaire shall provide all sanitation services to the existing SAAEs

Overview // Universalization goals

The goals of service universalization for the municipalities of the metropolitan block are as follows:



WATER

100%* in 6 years for all municipalities.



SEWAGE

90%* according to the deadlines in the table below.

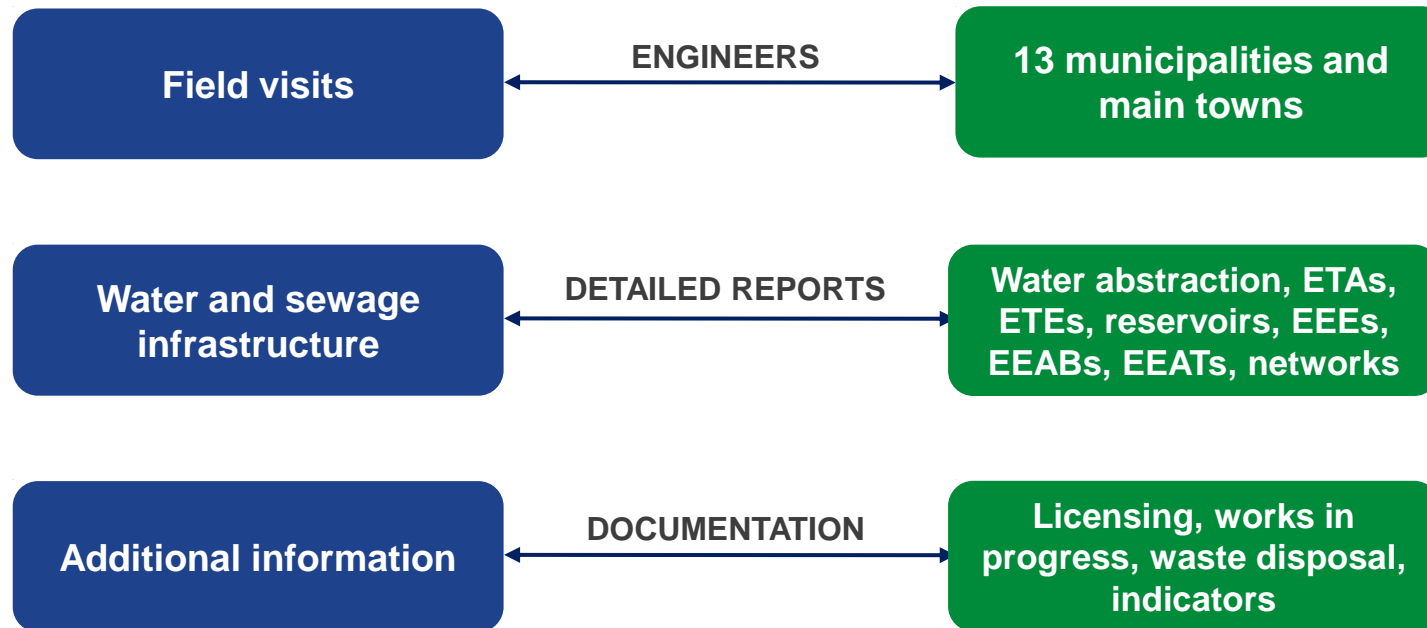
6 years	8 years	11 years	16 years
Marechal Deodoro (SAAE)	Atalaia (SAAE)	Messias	Coqueiro Seco
	Barra de Sto Antônio (SAAE)	Murici	Pilar
	Barra de São Miguel		Santa Luzia do Norte
	Maceió		Satuba
	Paripueira		
	Rio Largo		

* Percentage refers to the project's target population, which is made up of residents in urban areas and villages above 1,000 inhabitants.



Engineering studies

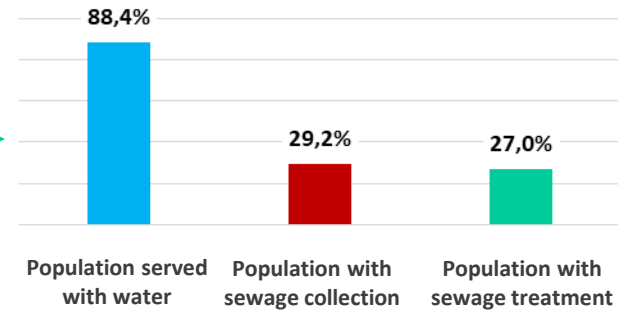
Reports have been prepared for each municipality, providing complete information about existing water supply and sanitary sewage systems



General information on water and sewage systems

General framework

EXISTING SYSTEMS



Facilities capacity

TECHNICAL INFORMATION

Specific data on the capacity of the main units and equipment

Facilities conditions

PHOTOGRAPHIC REPORT

Individual records of the main units and equipment

Project assumptions

WATER SUPPLY

- ✓ Consumption: 155.00 L/inhab.day
- ✓ Service rate: 100%
- ✓ Current loss rate: 58.8%
- ✓ Expected losses: 25% in 20 years
- ✓ Standardization of water pumps
- ✓ Maximum static pressure: 50 mca
- ✓ Minimum dynamic pressure: 10 mca
- ✓ Minimum diameter: 50 mm PVC

SANITARY SEWAGE

- ✓ Contribution: 124.00 L/inhab.day
- ✓ Urban service rate: 90%
- ✓ Population service rate: 80%
- ✓ Infiltration rate: 0.05 L/s.km *
- ✓ Standardization of EEEBs
- ✓ Use of compact EEEB up to 10 L/s
- ✓ Minimum diameter: 150 mm PVC

*Casal data indicate N.A. at an average depth of 4 m on the coast of the metropolitan area, rising to 40 m in Tabuleiro. In addition, in Maceió this region already has such coverage and is directed to the existing issuer.

EEEB = Raw sewage lift station

Capex assumptions

WATER SUPPLY

- ✓ Elevated reservoir up to 150 m³ - metallic *
- ✓ Reservoir above 150 m³ - concrete *
- ✓ Compact ETA up to 180 m³/h *
- ✓ Connection depth: 1.0 m
- ✓ Urban area coverage:
 - Ø 50 to 500 mm: 1.30 m
 - Above Ø 500 mm: 2.00 m
- ✓ Rural area coverage:
 - Ø 50mm = 1.0 m

SANITARY SEWAGE

- ✓ ETE up to 500 inhab.: pit + sink
- ✓ Stabilization ponds up to 60 L/s
- ✓ Maceió – Activated sludge
- ✓ Connection depth: 1.0 m
- ✓ Urban area coverage:
 - Ø 150 mm: 1.50 m
 - Ø 200 mm: 2.50 m
 - Ø 250 to 1,000 mm: 3.20 m
- ✓ Urban area coverage
 - Ø 150 mm: 1.50 m



In order to guarantee high levels of reliability and efficiency for the entire production chain and to avoid any budget restrictions that Casal may have, **the concessionaire must perform the construction required for the implementation, expansion, renovation or improvement of the treated water production infrastructure in order to guarantee the universalization of services.**



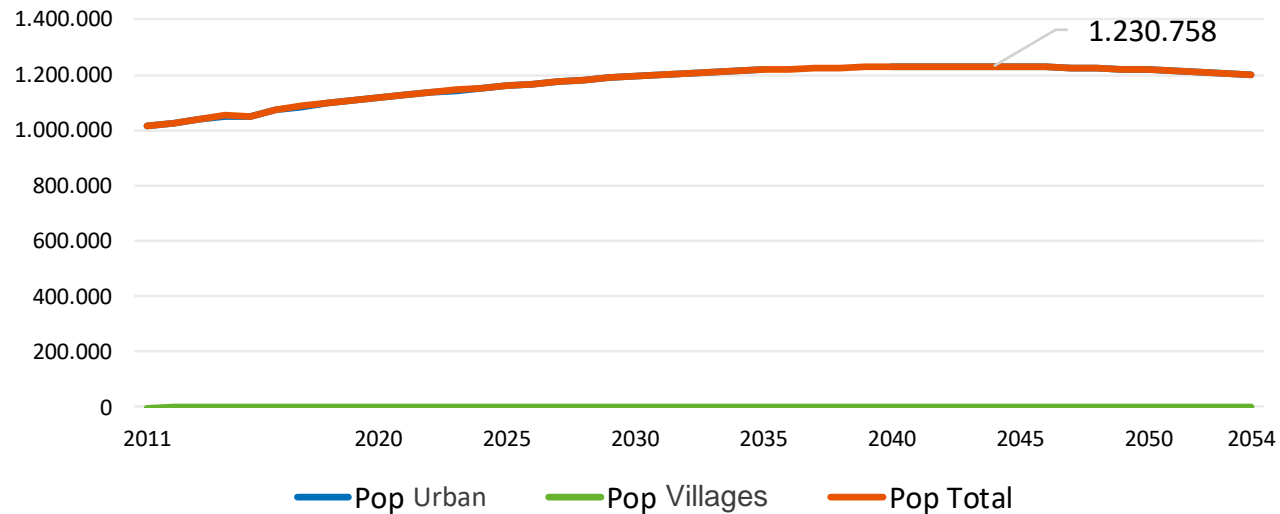
For such, the concessionaire is responsible for:

- ▶ Preparing all relevant planning, projects and licenses, submitting the gathered documentation to Casal's approval, who may request the appropriate changes or additions to guarantee the quality and purpose of the construction;
- ▶ Performing the civil works, supplying all the materials, workforce and equipment necessary for the execution of these services and their refinement;
- ▶ Delivering the construction with its facilities tested and in perfect working conditions.



On the other hand, it shall be Casal's responsibility to act as a monitoring agent and supervisor of such civil works, as well as of the future operation and maintenance of these facilities.

Population growth



IN THE CONCESSION AREA

MACEIÓ	Current (1)	2054 (2)	Increment
Urban population	890,000	1,200,000	310,000
Population - villages > 1,000 inhab.	.	.	.
Population - Total	890,000	1,200,000	310,000

(1) Does not include the PPP Sanama area

(2) Total population – Sanama contract terminated

Project investments up to 2025 (R\$) in distribution

YEAR	1	2	3	4	5	6	Up to 2054	Total
RESERVOIRS	-	-	-	19,551,149	19,551,149	19,551,149	-	58,653,448
TREATED WATER PUMPS	-	-	-	2,687,356	2,687,356	2,687,356	-	8,062,068
TREATED WATER PIPELINE	-	-	-	27,545,653	27,545,653	27,545,653	-	82,636,960
COVERAGE	55,251,075	55,251,075	55,251,075	55,251,075	55,251,075	55,251,075	-	331,506,452
CONNECTIONS	5,428,152	5,428,152	5,428,152	5,428,152	5,428,152	5,428,152	-	32,568,910
HYDROMETERS	1,561,380	1,561,380	1,561,380	3,643,215	3,643,215	3,643,215	118,917,049	134,530,833
LOSS CONTROL	-	-	-	11,453,454	11,453,454	11,453,454	148,894,904	183,255,266
AREA ACQUISITION	-	3,085,084	3,085,084	3,085,084	3,085,084	3,085,084	-	15,425,419
PROJECTS	3,729,630	3,729,630	3,729,630	3,729,630	3,729,630	3,729,630	27,350,518	49,728,298
TOTAL	65,970,237	69,055,321	69,055,321	132,374,768	132,374,768	132,374,768	295,162,471	896,367,655

Note: Figures not updated.

Population in the concession area

- ✓ Maceió holds an asset lease agreement with Sanema, where the company is responsible for the implementation of sewage system in the area of its operation. After completion (2021), the contractor shall be responsible for operating this system.
- ✓ There is also a PPP contract with Sanama in which the company is responsible for the construction and operation of the system until the end of the contract (2048). Once the contract is terminated, the contractor shall be responsible for the operation of this system.
- ✓ The engineering studies do not consider these contracts on Capex costs, but do consider Opex costs as of the key years in operations by the contractor.

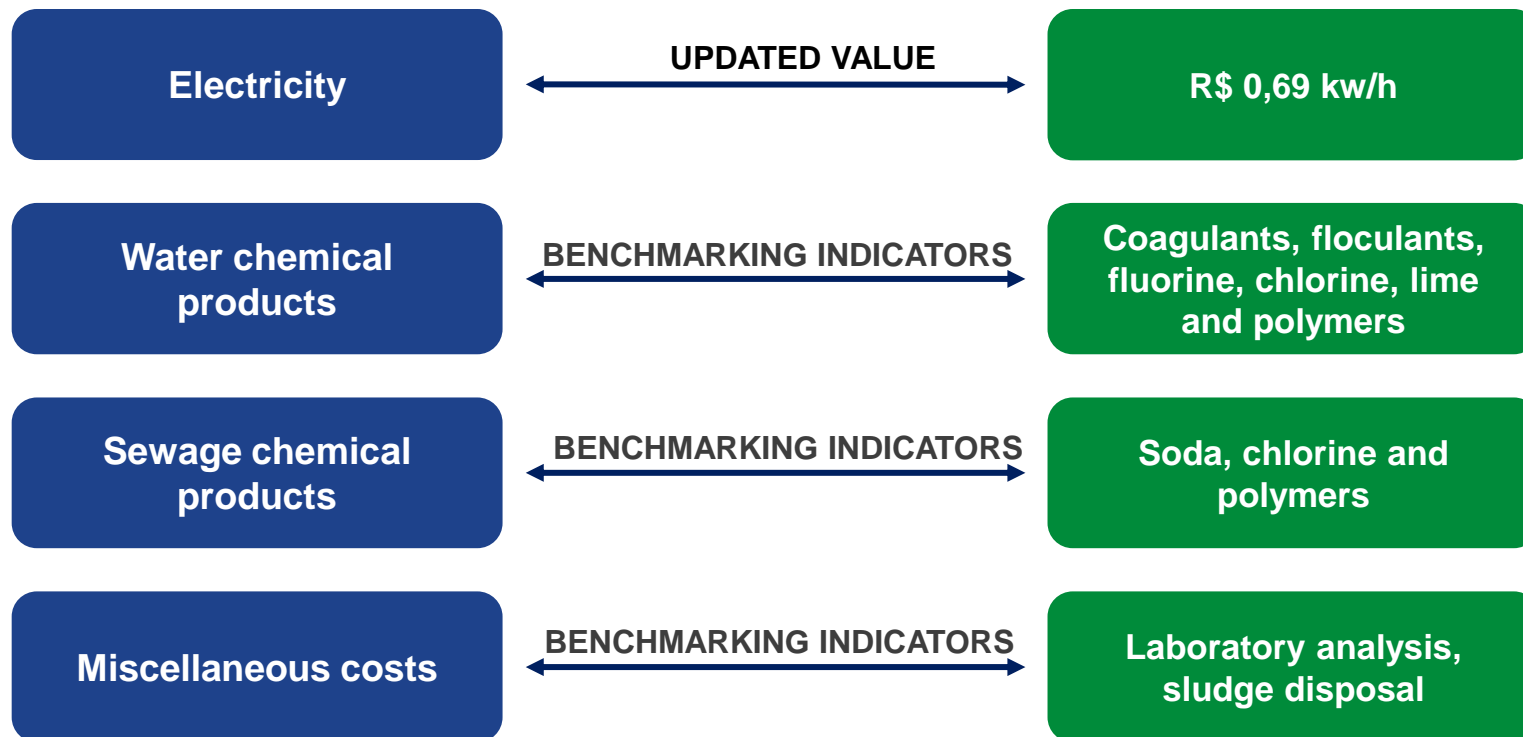
Project investments up to 2054 (R\$) in the concession area

YEAR	1	2	3	4	5	6	7	8	9 to 11	12 to 16	Up to 2054	Total
WATER	65,996,432	65,996,432	65,996,432	134,457,686	134,457,686	134,457,686	16,962,044	17,881,474	50,475,451	81,325,197	128,623,085	896,629,605
SEWAGE	61,223,843	68,507,124	89,438,875	89,438,875	89,438,875	89,438,875	89,397,570	89,397,570	2,494,934	9,248,848	6,721,447	684,746,838
TOTAL	127,220,275	134,503,556	155,435,307	223,896,562	223,896,562	223,896,562	106,359,614	107,279,044	52,970,385	90,574,045	135,344,532	1,581,376,443

Note: Figures not updated.

- ▶ The environmental licensing of linear civil works in Maceió is issued by the Municipal Secretariat for Territory and Environmental Development through a simplified process.
- ▶ Casal had a 2017 license for the water supply and sanitary sewage systems as a whole.
- ▶ We recommend that during months of assisted operation, licensing should be obtained for linear civil works according to the type of system.
- ▶ The issuer operates with a provisional license issued by the Environment Institute of Alagoas (IMA).
- ▶ For other kind of civil works, licenses must be requested to IMA.

Opex assumptions – supplies



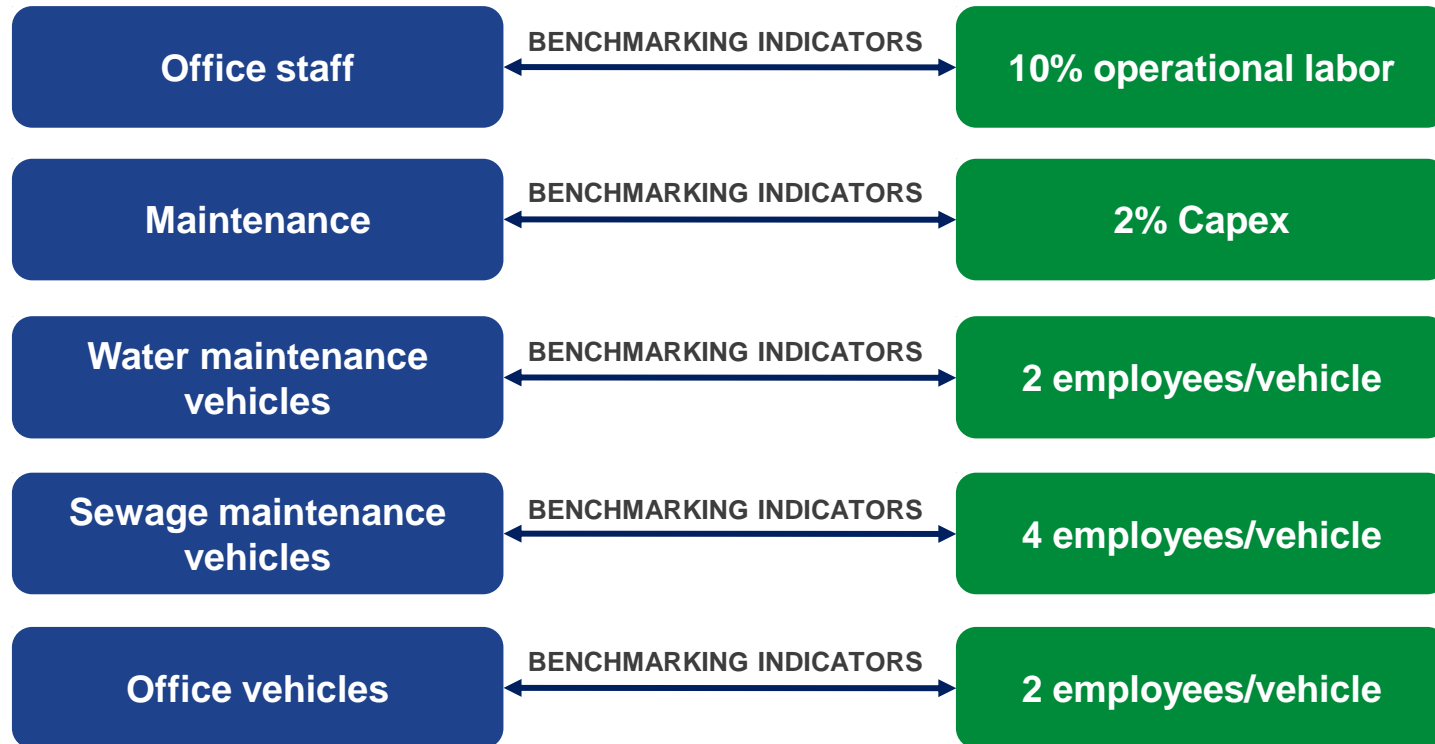
Engineering studies // Opex assumptions

Opex assumptions – operational labor force*

Water supply	Sewage
Maintenance 700 connections / employee	Maintenance 2.100 connections / employee
Engineering 10.000 connections / employee	Engineering 20.000 connections / employee
Operations 10.000 connections / employee	Operations 10.000 connections / employee

* Impacts on indicators after the 5th year

Opex assumptions – miscellaneous





Financial modeling

- ▶ Financial model reference date: **1/31/2019**
- ▶ Beginning of concession: **1/1/2020**
- ▶ Contract term: **35 years**
- ▶ End of concession: **12/31/2054**
- ▶ Projection considers **real values**, i.e., clear of any inflation effect.
- ▶ Accounting Standard: ICPC01-R1 and OCPC05 (translations of **IFRIC 12**), which define the accounting principles to be used by concessionaires regarding the services provided to public authorities in the concession. The goods related to the services delivered are recorded as intangible assets.

Financial modeling // Revenue calculation

Direct Revenue from Water

$$\text{Water Revenue} \left(\frac{\text{R\$}}{\text{month}} \right) = \text{Connections} * \text{Average Consumption} \left(\frac{\text{m}^3}{\text{Connections} * \text{month}} \right) * \text{Average Revenue} \left(\frac{\text{R\$}}{\text{m}^3} \right)$$

Direct Revenue from Sewage

$$\text{Sewage Revenue} \left(\frac{\text{R\$}}{\text{month}} \right) = \text{Multiplication Factor} (\%) * \text{Water Revenue} \left(\frac{\text{R\$}}{\text{month}} \right)$$

Indirect Revenue and Financial Revenue

$$\text{Indirect Revenue} \left(\frac{\text{R\$}}{\text{month}} \right) = \text{Reference Percentage} (\%) * \text{Direct Revenue} \left(\frac{\text{R\$}}{\text{month}} \right)$$

$$\text{Financial Revenue} \left(\frac{\text{R\$}}{\text{month}} \right) = \text{Reference Percentage} (\%) * \text{Direct Revenue} \left(\frac{\text{R\$}}{\text{month}} \right)$$

Collected Revenue

$$\text{Collected Revenue} \left(\frac{\text{R\$}}{\text{month}} \right) = (\text{Direct} + \text{Indirect} + \text{Financial}) \left(\frac{\text{R\$}}{\text{month}} \right) * (1 - \text{Default} (\%))$$

Financial modeling // Revenue assumptions

Average consumption and average water tariff

Municipality	Residence w/o social tariff		Social tariff		Nonresidence	
	Average consumption (m ³ /month/eco)	Average tariff (R\$/m ³)	Average consumption (m ³ /month/eco)	Average tariff (R\$/m ³)	Average consumption (m ³ /month/eco)	Average Tariff (R\$/m ³)
Atalaia*	11.43	5.60	9.24	2.80	19.86	11.81
Barra de Santo Antônio*	11.42	5.60	9.23	2.80	19.84	11.80
Barra de São Miguel	13.07	6.58	10.56	3.29	22.71	13.86
Coqueiro Seco	10.39	4.96	8.39	2.48	18.04	10.46
Maceió	11.62	5.64	9.39	2.82	20.18	11.89
Marechal Deodoro*	11.45	5.61	9.25	2.81	19.89	11.83
Messias	10.26	5.04	8.29	2.52	17.82	10.62
Murici	9.18	5.18	7.42	2.59	15.94	10.92
Paripueira	11.26	5.65	9.10	2.83	19.56	11.90
Pilar	10.97	5.49	8.87	2.75	19.06	11.57
Rio Largo	9.45	4.85	7.63	2.42	16.41	10.22
Santa Luzia do Norte	10.68	5.25	8.63	2.62	18.55	11.06
Satuba	10.58	5.15	8.55	2.57	18.38	10.85

Calculated according to 2018 data from CASAL.

The social tariff for water is half the regular tariff of a given consumption range.

*SAAE: projection is the average of the remaining municipalities. Average tariffs are only reached from year 6 onwards (see next slide).

Financial modeling // Revenue assumptions

CASAL residential water tariff (up to 10m³): R\$ 4.68/m³

SAAE water tariff (In R\$/m³)

SAAE	Residential tariff (<10 m ³)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6 onwards
Atalaia ¹	3.50	3.50	3.74	3.97	4.21	4.44	4.68
Barra de Santo Antônio ²	3.00	3.00	3.34	3.67	4.01	4.34	4.68
Marechal Deodoro ³	2.80	2.80	3.18	3.55	3.93	4.30	4.68

¹ Source: <http://www.saaeatalaia.com.br/site/>

² Source: <http://www.saaebsa-al.com.br/saaebarra2/>

³Source:

http://www.saaemarechaldeodoro.com.br/saae_md/pagina.php

Reference date: 1/31/2019.

Other classes of tariffs should follow the same rationale as the residential tariff (up to 10 m³), with the amount charged by SAAEs growing linearly until reaching the CASAL tariff in year 6.

Distribution of connections by category

Category	Current*	Year 1	Year 2	Year 3	Year 4	Year 5 onwards
Residence tariff w/o social tariff	91.18%	89.26%	88.10%	86.93%	85.77%	84.60%
Social tariff	1.92%	3.84%	5.01%	6.17%	7.34%	8.50%
Nonresidential tariff	6.90%	6.90%	6.90%	6.90%	6.90%	6.90%

*CASAL data from 2018.

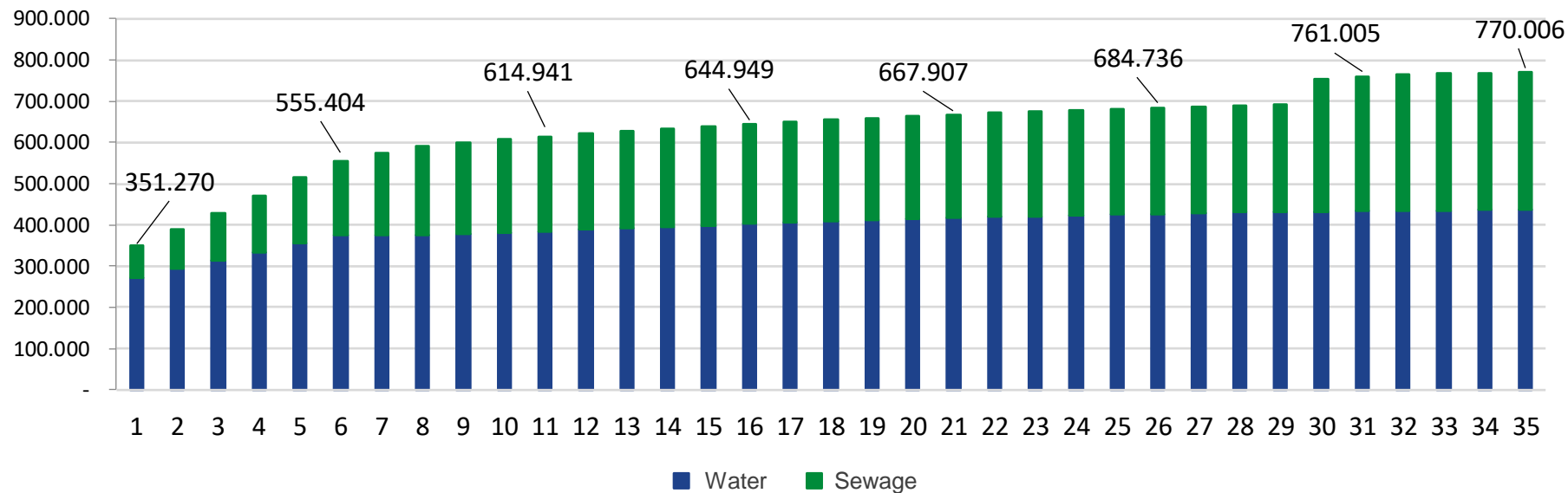
Other assumptions

- ▶ The consumption ratio ($\text{m}^3/\text{economy}/\text{month}$) between properties served with water and sewage and those served only with water is 0.85. The assumption made is that water consumption is reduced when the user is also charged for sewage.
- ▶ This reduction in consumption will reduce the average tariff ($\text{R}\$/\text{m}^3$) to 0.95 of the water-only average tariff, since tariffs are progressive in consumption.
- ▶ Minimum consumption: $10 \text{ m}^3/\text{month}/\text{economy}$
- ▶ Consumption is expected to increase by 7.14% over the first 5 years due to commercial improvements resulting from the installing of new water meters and more efficient controls.

Sewage tariff

Maceió	100% of water tariff
Other municipalities	80% of water tariff
Social tariff	50% of social water tariff

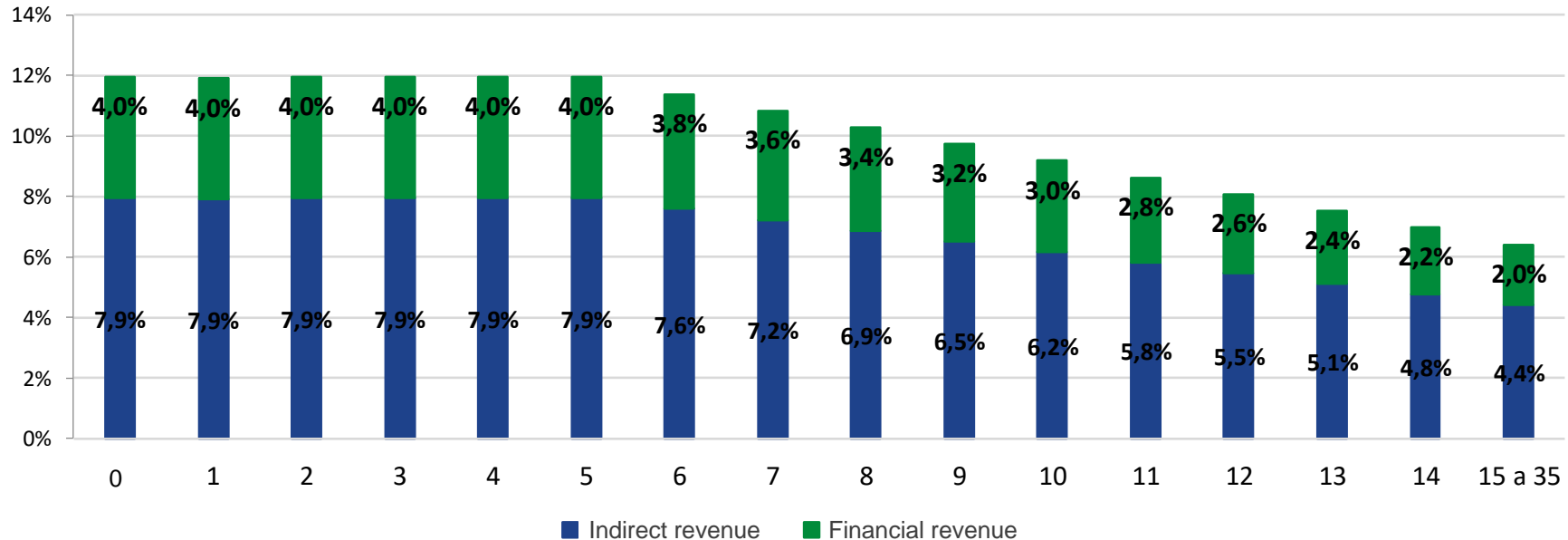
Direct revenue billed



- ▶ Direct revenue billed (35 years): R\$ 22.2 billion
 - ▶ Water: R\$ 13.9 billion
 - ▶ Sewage: R\$ 8.3 billion

Financial modeling // Revenue assumptions

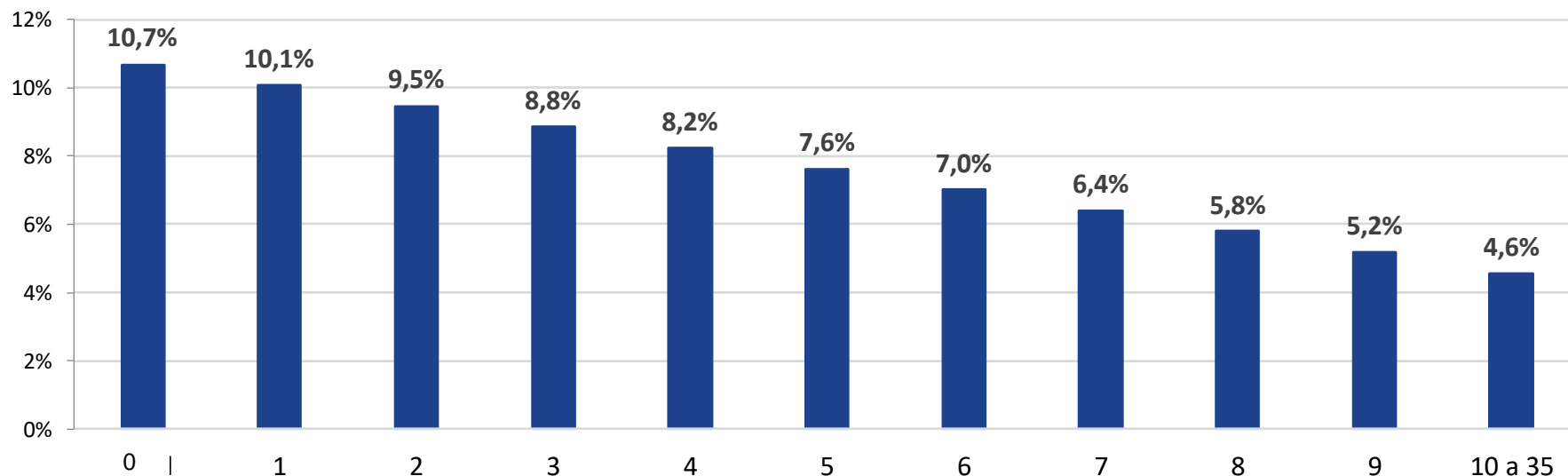
- ▶ **Indirect revenue:** registration fees, connections, reconnections, conservation and repair of water meters.
- ▶ **Financial revenue:** fines and lateness fees.



- ▶ The values used in the curves were obtained from references of public companies in the Northeast region between 2014 and 2016, according to revenue data reported by SNIS.

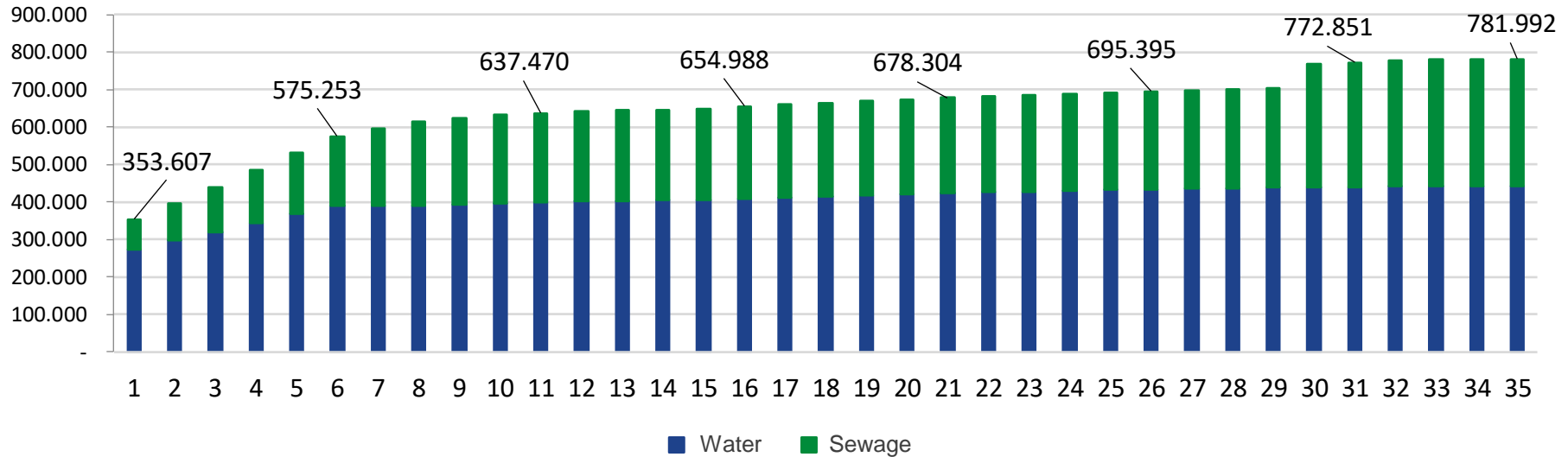
Default

- ▶ Based on default rates faced by CASAL in recent years, the assumption is that the concessionaire will reduce the default rate from 40% to 10% in 10 years, as shown in the curve below:

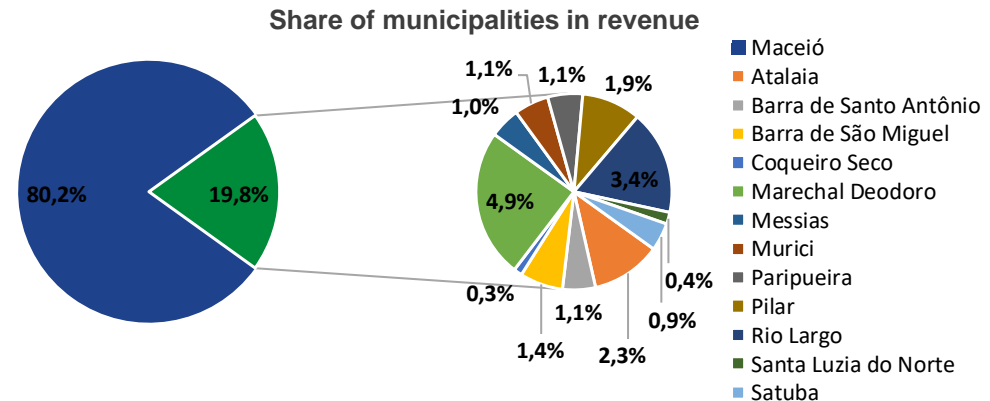


- ▶ Data from private concessions in the SNIS were used as reference for the 10% default rate target.
- ▶ By interpretation of Normative Instruction RFB no.1700 and Law 9430, default amounts are computed as losses in the tax base 6 months after billing.

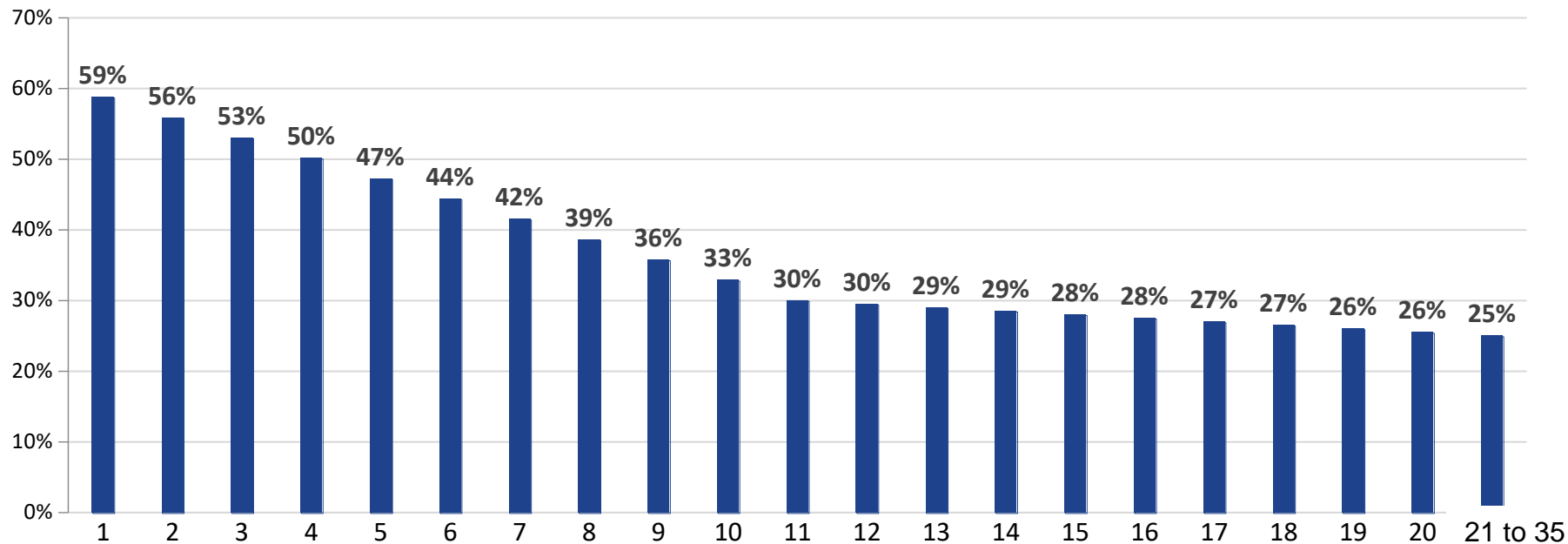
Financial modeling // Projected total revenue collected



- ▶ Total revenue (35 years): R\$ 22.7 billion
- ▶ Water: R\$ 14.2 billion
- ▶ Sewage: R\$ 8.5 billion
- ▶ CAGR (until full water coverage): 8.4%
- ▶ CAGR (until full sewage coverage): 6.6%



Water loss in distribution



- ▶ Loss rate drop is steeper in the first 10 years, reaching 30% in the 11th year. Over the following 10 years, the concessionaire must further reduce water loss to 25%.

OPEX - Water

Municipality	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 35
Metropolitan block	273,776	275,480	277,613	280,187	283,193	257,190	273,985
Atalaia	3,419	3,617	3,815	4,012	4,210	4,388	4,904
Barra de Santo Antônio	1,426	1,549	1,674	1,801	1,929	2,091	2,401
Barra de São Miguel	4,254	3,973	3,736	3,536	3,364	2,714	2,851
Coqueiro Seco	755	776	797	816	835	784	818
Maceió	223,903	225,790	227,869	230,216	232,827	210,339	223,486
Marechal Deodoro	10,395	9,899	9,545	9,284	9,089	8,539	9,477
Messias	2,540	2,618	2,692	2,762	2,829	2,687	2,897
Murici	3,855	3,758	3,711	3,697	3,705	3,088	3,325
Paripueira	3,232	3,137	3,050	2,980	2,920	2,574	2,760
Pilar	4,604	4,875	5,125	5,361	5,584	5,102	5,258
Rio Largo	12,488	12,382	12,302	12,243	12,245	11,306	12,063
Santa Luzia do Norte	1,082	1,092	1,101	1,110	1,118	1,044	1,086
Satuba	1,826	2,015	2,196	2,369	2,536	2,534	2,657

OPEX - Sewage

Municipality	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 35
Metropolitan block	19,508	24,830	30,489	36,497	42,870	61,397	91,278
Atalaia	169	344	525	712	906	1,529	1,749
Barra de Santo Antônio	79	164	255	351	453	789	930
Barra de São Miguel	79	162	247	335	426	713	818
Coqueiro Seco	11	21	33	44	56	118	215
Maceió	17,301	21,212	25,404	29,893	34,689	48,492	75,342
Marechal Deodoro	1,277	1,715	2,167	2,633	3,110	3,771	4,338
Messias	47	97	149	204	261	564	721
Murici	56	115	177	242	309	664	861
Paripueira	71	145	222	302	386	663	767
Pilar	66	135	208	284	364	767	1,396
Rio Largo	310	632	966	1,313	1,675	2,826	3,227
Santa Luzia do Norte	13	27	41	56	71	150	273
Satuba	30	61	94	128	163	350	641

OPEX - General

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 35
General expenses	16,438	5,879	6,490	7,539	8,193	8,090	6,765

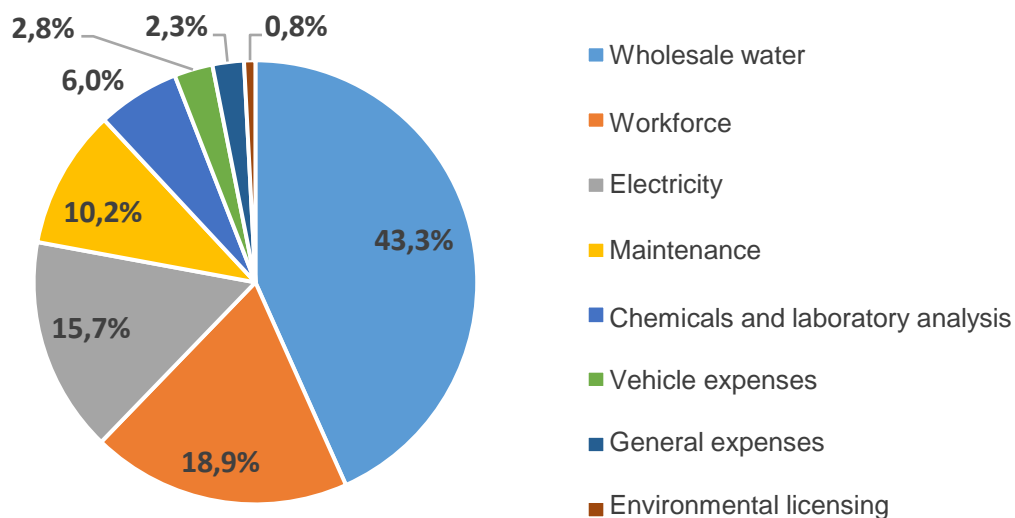
Values in R\$ Thousands

- ▶ Insurance expenses
 - ▶ Operational risk insurance
 - ▶ Engineering risks insurance
 - ▶ Civil liability insurance
- ▶ Guarantee expenses
 - ▶ Proposal guarantee
 - ▶ Performance bond
- ▶ ARSAL inspection fee (0.5% of Net Operating Revenue)
- ▶ BNDES study reimbursement*
- ▶ B3 contract reimbursement*

* Must be paid before contract signing.

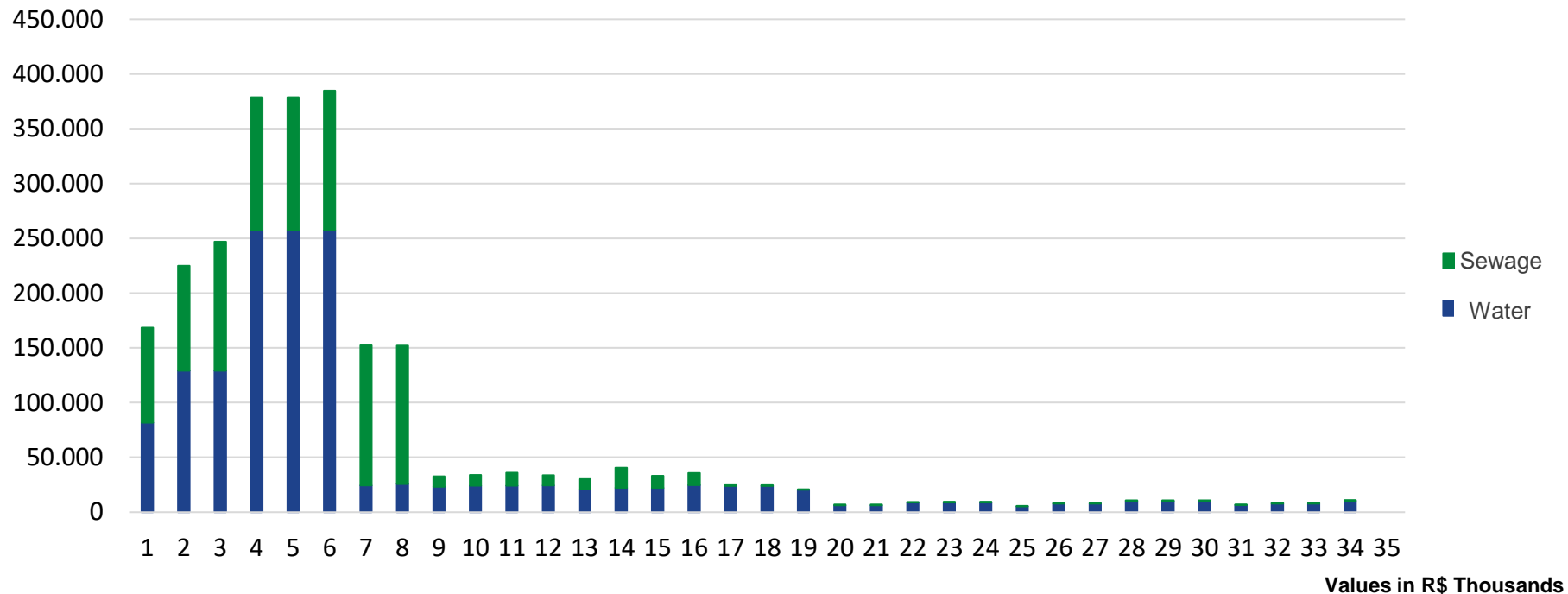
Financial modeling // OPEX Composition

OPEX Composition (for the entire concession)



Category	Total (35 years)
Wholesale water	5,145,734
Personnel expenses	2,249,155
Electricity	1,862,281
Maintenance	1,206,777
Chemicals and laboratory analysis	714,470
Vehicle expenses	333,504
General expenses	272,541
Environmental licensing	97,809

Financial modeling // CAPEX projection



CAPEX

R\$ 2.56 billion



Water

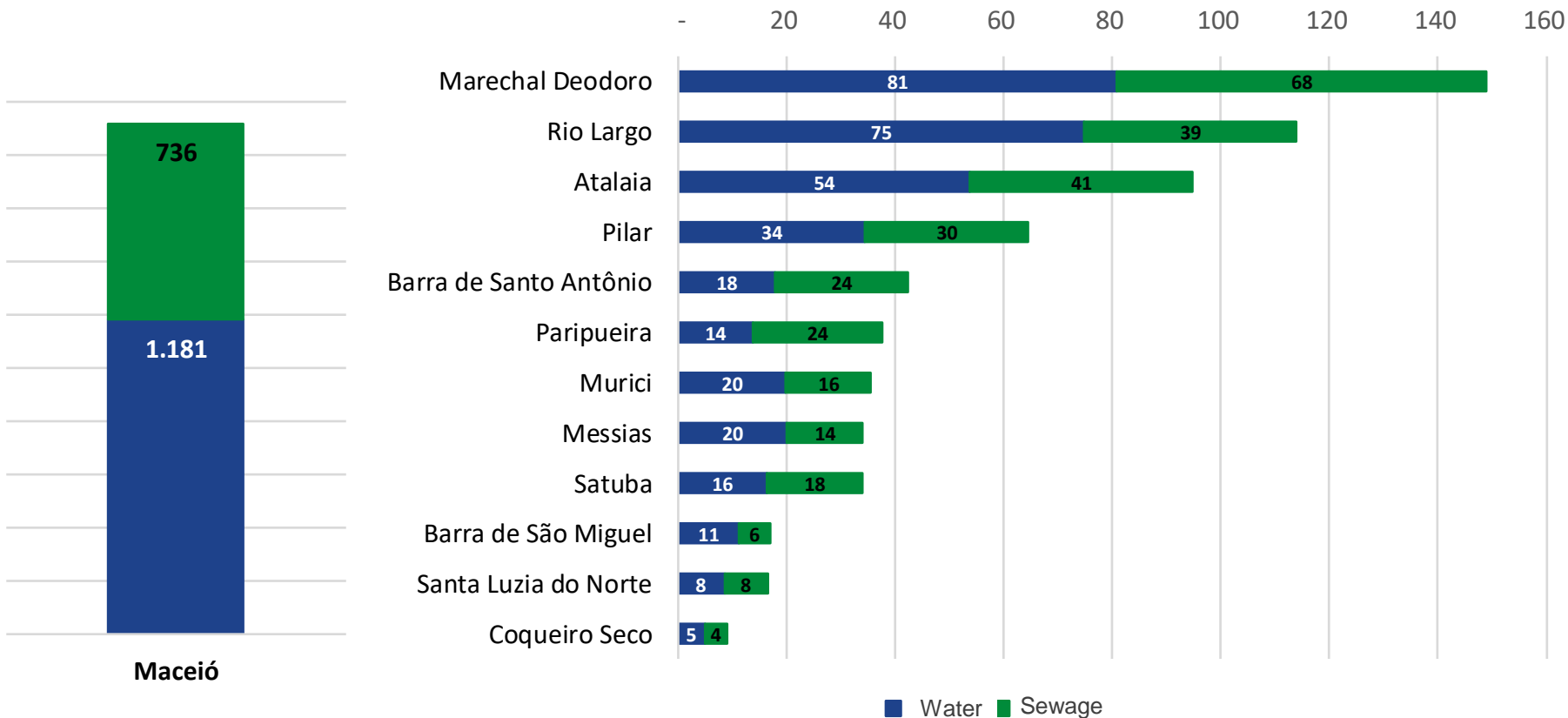
R\$ 1.53 billion



Sewage

R\$ 1.03 billion

CAPEX projection

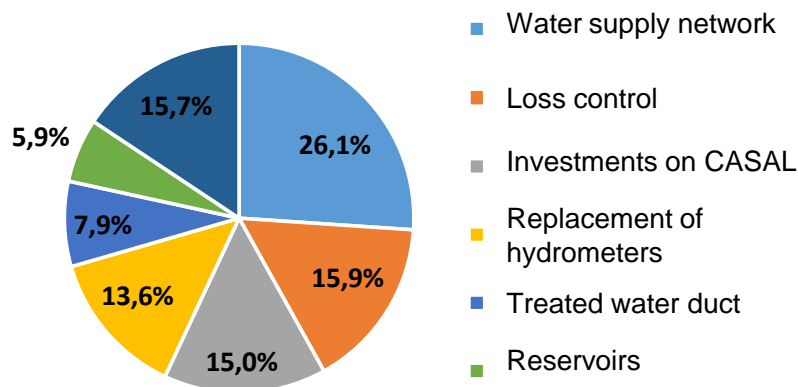


Note: Nonbinding reference values.

Values in R\$ million.

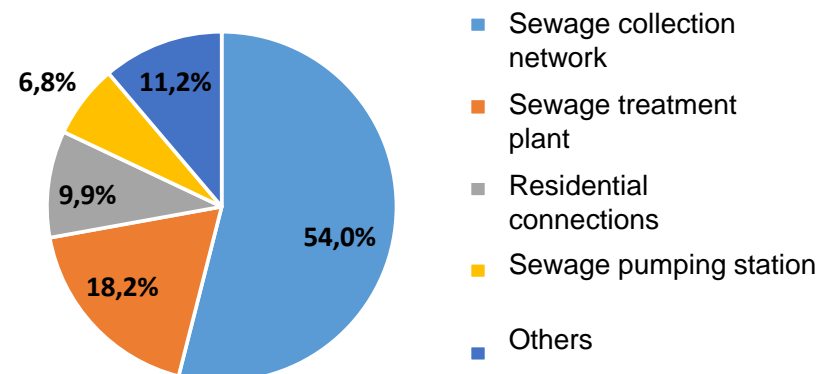
Financial Modeling // CAPEX Composition

CAPEX - Water



- Water supply network
- Loss control
- Investments on CASAL
- Replacement of hydrometers
- Treated water duct
- Reservoirs

CAPEX - Sewage



- Sewage collection network
- Sewage treatment plant
- Residential connections
- Sewage pumping station
- Others

Category	Total (35 years)
Water supply network	400,492
Loss control	243,829
Investments on CASAL	231,216
Replacement of hydrometers	208,282
Treated water duct	121,074
Reservoirs	90,918
Others	240,851

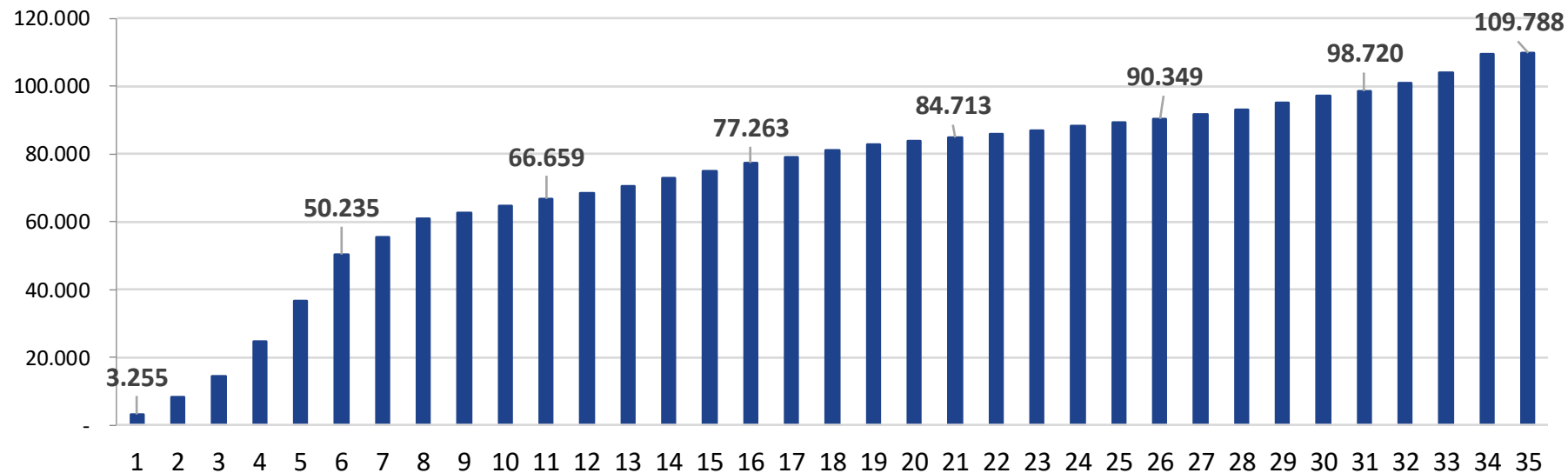
Category	Total (35 years)
Sewage collection network	554,781
Sewage treatment plant	186,968
Residential connections	101,464
Sewage pumping station	69,600
Others	115,160

Note: Nonbinding reference values.

Values in R\$ Thousands

Amortization of intangibles

- ▶ Following accounting principles regarding public service concession, the amortization of the investments which integrate the private operator's intangible assets were considered within the term of the concession.
- ▶ The amortization method used in all scenarios is proportional to the demand, which is represented by the curve of properties served.



Values in R\$ Thousands

Financial modeling // OPEX and CAPEX Adjustment

The Conceptual Engineering Project was delivered in September 2017 and the reference date for the OPEX and CAPEX is March 2017. The values presented in the Financial Modeling section have been adjusted to the model's date of reference: 1/31/2019.

- ▶ **CAPEX:** National Index of Civil Construction (INCC)
Accumulated value in the period: 7.46%
- ▶ **Workforce:** Collective labor agreements with the state of Alagoa's Union of Sanitation workers and Consumer Price Index (IPCA).
Accumulated value in the period: 9.86%
- ▶ **Electricity:** Tariff adjustments by the energy concessionaire and IPCA.
Accumulated value in the period: 32.80%
- ▶ **Other items:** IPCA
Accumulated value in the period: 6.12%

Working Capital

- ▶ The average payment terms considered for the project were based on market research (CASAL and other sanitation operators in Brazil) carried out by the consortium.

Use	Term
Receivable	64 days
Stock	5 days
Source	Term
Suppliers – water from CASAL	30 days
Suppliers – others	66 days
Labor liabilities	30 days
Taxes payable	30 days

Financial modeling // Tax assumptions

Indirect taxes

- ▶ Regime: **Noncumulative**
- ▶ Social integration program (PIS): **1.65%**
- ▶ Contribution to the financing of social security (COFINS): **7.60%**
- ▶ Tax on movement of goods and services (ICMS): **Exempt**
- ▶ Costs and expenses with wholesale treated water, electricity, chemicals, system maintenance, laboratory analysis and sludge are electable to PIS and COFINS tax credits. Similarly, amortization of intangibles linked to the investments made are also deducted from the calculation basis.

Direct taxes

- ▶ Regime: **real profit**
- ▶ Income Tax: **15.0% + 10.0% on what exceeds R\$ 240,000**
- ▶ Social Contribution on Net Income (CSLL): **9.0%**

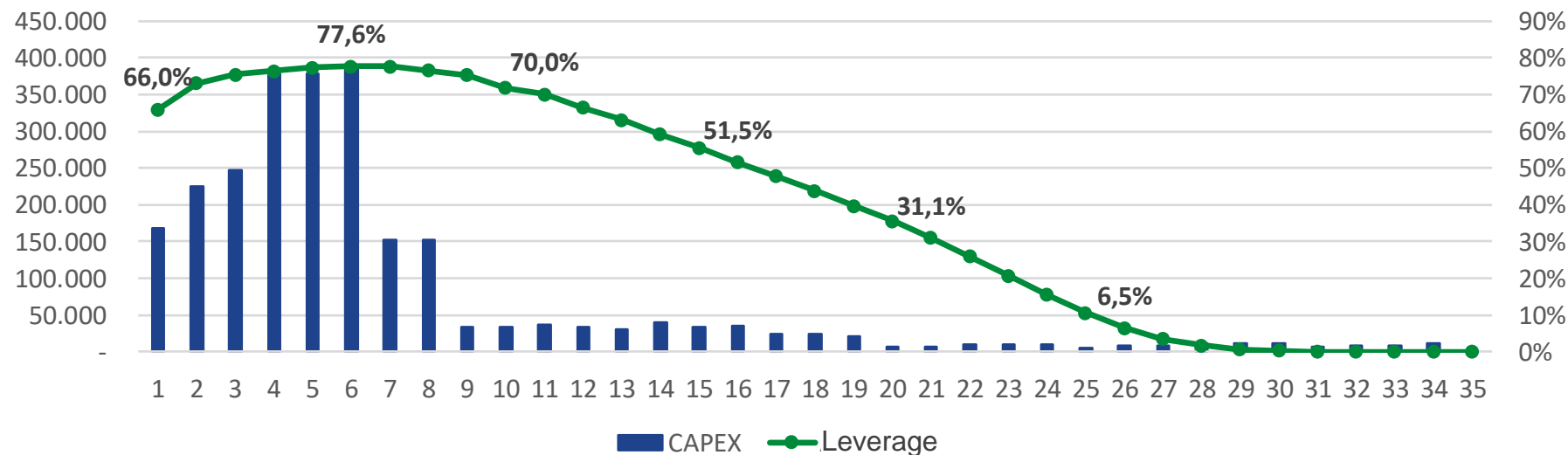
Financial modeling // Financing assumptions

Reference funding conditions

- ▶ Funded CAPEX: **70% of total CAPEX in the first 10 years**
- ▶ Amortization method: **continuous amortization system**
- ▶ Grace period (interest and amortization): **2 years**
- ▶ Amortization term: **20 years** after the end of the grace period.
- ▶ Nominal cost of debt: **Sources of Debt Financing- 50% public banks + 50% debentures**

Leverage level

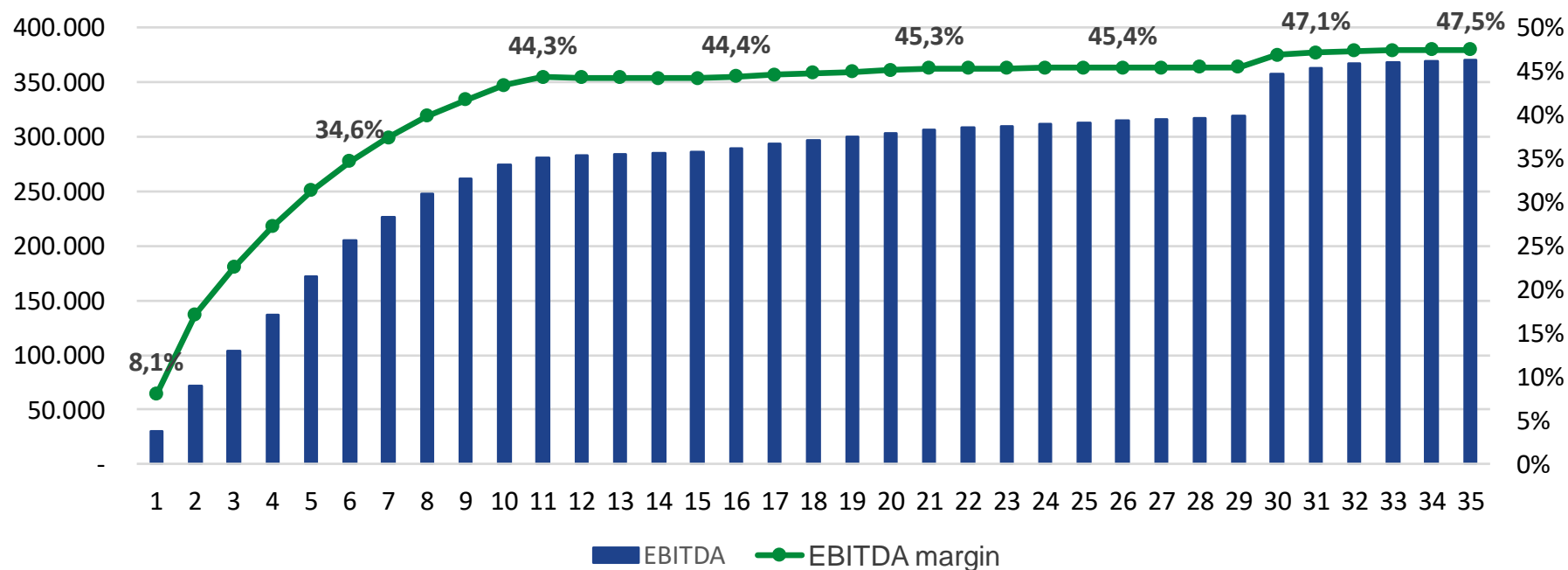
- ▶ Given the funding assumptions, the average leverage level over the 35 years is **39.9%**



Debt service coverage ratio (ICSD)

- ▶ The debt service coverage ratio (ICSD) is a widely used indicator that represents the company's capacity to pay debt
- ▶ Minimum ICSD: **1.3** (Year 10)
- ▶ Average ICSD: **12.9**

EBITDA and EBITDA margin

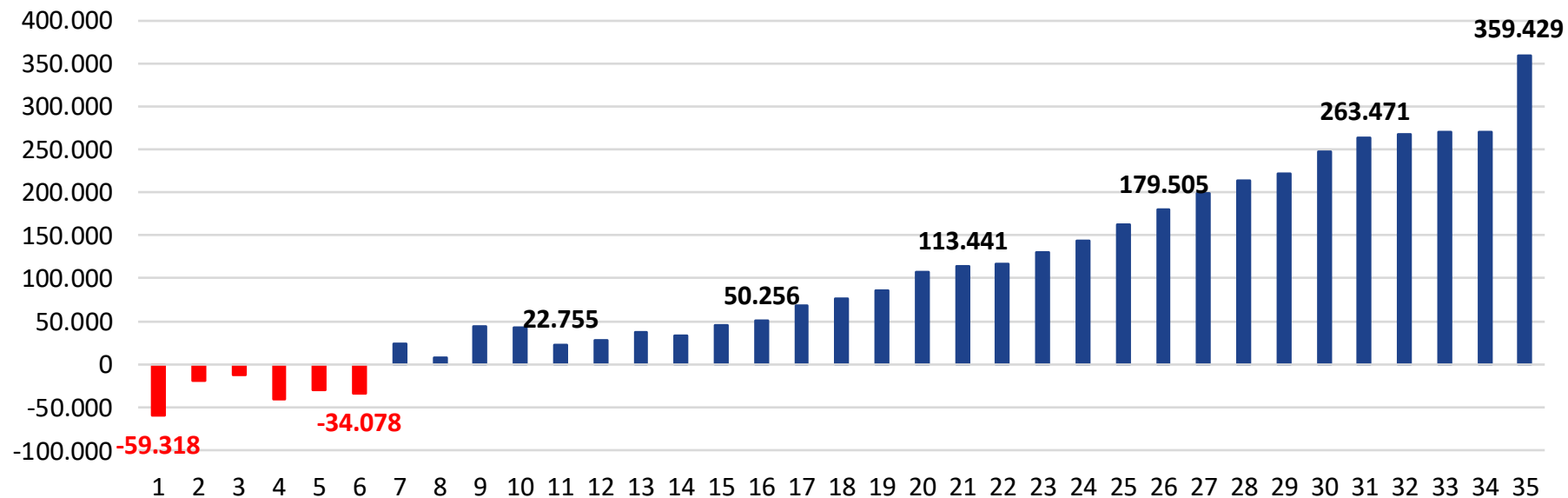


► Average EBITDA margin: **41.2%**

Cash Flow – FCFF

- ▶ Project Internal Rate of Return (FCFF): **9.33%**

Cash Flow – FCFE





Legal aspects

Regionalized concession of water and sewage services provided in the Metropolitan Region of Maceió



Legal-institutional
model

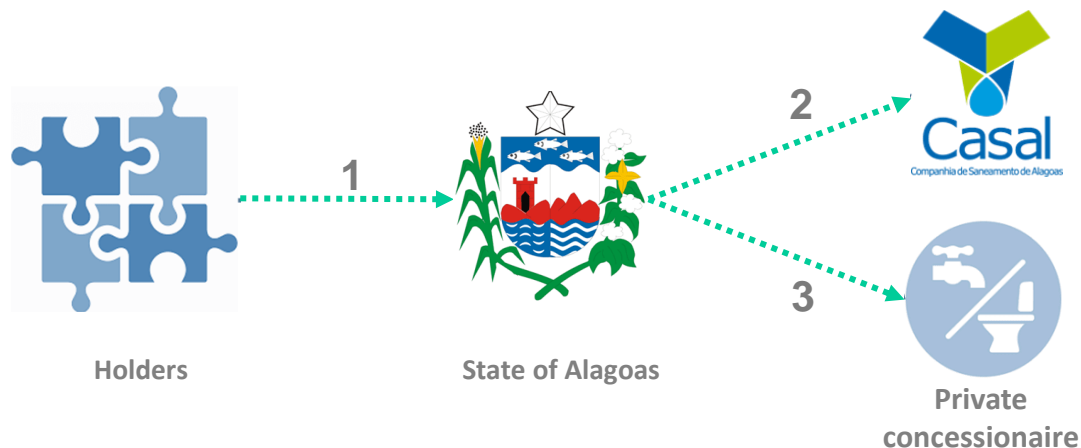
It concerns the institutional basis of the project and the legal relationship to be established between the State of Alagoas, the municipalities covered, and Casal



Subjects of public notice,
contract and annexes

Conceptual view on central legal aspects of public notice, contract and annexes

Legal aspects // Legal-Institutional model



1. Membership of Holders

- RMM: meeting and decision of the Metropolitan assembly and
- Cooperation agreement

2. CASAL Delegation

- Contract Execution of program with Casal (upstream)

3. Delegation of Services to Private

- Contract execution of concession (downstream)
- Payment of grant amounts to the state of Alagoas
- Contract termination of program and currently active agreements between Casal and municipalities

Performance of the state of Alagoas

- Process catalyst: conducting technical feasibility studies in conjunction with BNDES
- Interlocution with the holders
- Project bidding execution

Decision of the holders + legal formalization

► Actions carried out

- **The Complementary Law No. 50/2019**, which regulates the Metropolitan Region of Maceió – RMM, was approved;
- The consultation and public hearing of the regional basic sanitation plan (PRSB) and the intent to carry out the regional concession was approved by the metropolitan meeting and the Metropolitan Development Council (CDM);
- Public consultation started on November 8th;
- Public hearing held on November 29

► Proposed course of action

- **Approval of the PRSB** at the metropolitan meeting and the signing of the agreement at the CDM – meeting scheduled for November 12;
- Celebration of the **cooperation agreement** between RMM, the state and Aarsal – after the approval of the PRSB;
- **Publication of the bidding** for the regional concession of metropolitan services;
- After bidding, Regional Concession Agreement execution with the winner of the bidding and contract of Program with Casal

Legal aspects // Public notice and contract concepts



Public Notice

- ▶ Judgment criteria: highest grant (2 installments: The first of 30% condition for signing the contract, the second of 70% up to 2 (two) business days after the issuance of the System Transfer Term and/or beginning of the system operation by the contractor, whichever comes first.
 - ▶ Appeal phase at the end of the event
 - ▶ Bidding carried out at B3
 - ▶ Contract signature preceded by compliance with conditions (performance guarantee, mandatory insurance, reimbursement to BNDES and the state)
 - ▶ **Conditions for participation:**
1. **Fundraising certificate:** "Certificate issued by a public or private legal entity that proves that the Bidder or its Affiliate has carried out a venture in which it has raised at least R\$ 935 million, serving to comply with the financial obligations assumed by means of financial operations with maturity term of more than five years."
 - ▶ The sum of certificates related to different projects will be admitted, provided that at least one of the funding is of at least R\$ 280 million and certificates of less than at least R\$ 93 million are not accepted.
 - ▶ Quantities proportional to the percentage of shares of the bidder and its affiliates, in the companies or consortia responsible for the project object of the attestation.

Legal aspects // Public notice and contract concepts



Public Notice

▶ Participation conditions: (cont.)

2. **Service operation certificate:** “Certificate(s) issued by a legal person(s) under public or private law, which proves that the bidder and/or its affiliates has(ve) experience in the direct operation of water and/or sewage systems, to serve the population of at least 725,000 inhabitants. ”

- ▶ It should include the provision of **home water distribution and/or sewage collection** services.
- ▶ Sum of certificates related to different operations of the bidder and/or its affiliates: **admitted if, at least, one of the operations contemplates the provision of services to at least 150,000 inhabitants.**
- ▶ Consortium participation: **the sum of operation certificates between consortium bidders will not be allowed.**
- ▶ **Quantities proportional** to the percentage participation of the bidder, or its affiliate, in the companies or consortia responsible for the project object of the attestation.

Legal aspects // Public notice and contract concepts



Contract

- ▶ **Object of the concession:** water distribution services to users, collection, treatment and final disposal of sanitary effluents, provided in the concession area;
- ▶ **Concession area:** urban area and villages above 1,000 inhabitants of RMM. During the term of contracts 079/2014 and 179/2013, in the area of Sanama, the contractor will be responsible for the operation of the distribution system and for some commercial management services. In the Sanama area, for the operation of the sanitary sewage system, after the completion of the works by Sanama.
- ▶ **Maturity:** 35 years of operation + 6 months of assisted operation;
- ▶ **Assisted system operation:** 180 days from the conclusion of the contract (Casal responsible for the assisted operation; carrying out an inventory of goods linked by the concessionaire);
- ▶ **Performance bond:** up to the 6th year - R\$ 285,000,000.00; after the 6th to the 30th year - R\$ 142,500,000.00; after the 30th year - R\$ 285,000,000.00;
- ▶ **Expropriations:** responsibility of the concessionaire for the conduct of the process and payment of indemnities (declaration of public utility in charge of the granting authority);
- ▶ **Independent verifier:** hired by Aarsal; benchmarking performance goals.



Contract

► **Contractor compensation:**

Basic tariff: annually adjusted by the Contractual Adjustment Index (IRC)

Effective rate: Basic tariff* (1 - reducing factor)

Note: The reducing factor is the result of the evaluation of the performance indicators that will be detailed later on.

Annual readjustment

- ▶ The values of the tariffs for the provision of services, as well as the complementary services will be adjusted every 12 months from the date of the presentation of the commercial proposal in the bidding. Such readjustment will obey the following parametric formula:

$$\text{ADJUSTED RATE} = \text{CURRENT RATE} * \text{READJUSTMENT INDEX (IRC)}$$

- ▶ IRC will consist of a weighting of 5 items that make up the Concessionaire's costs and investments:

$$\text{IRC} = [\text{P1} \times (\text{Ai/Ao}) + \text{P2} \times (\text{Bi/Bo}) + \text{P3} \times (\text{Ci/Co}) + \text{P4} \times (\text{Di/Do}) + \text{P5} \times (\text{Ei/Eo})]$$

- P1, Ai and Ao: workforce;
- P2, Bi and Bo: electricity;
- P3, Ci and Co: chemicals;
- P4, Di and Do: Casal treated water;
- P5, Ei and Eo: Capex (civil construction).

Performance indicators // Effective tariff

Calculation of the effective rate

$$\text{EFFECTIVE RATE} = \text{ADJUSTED RATE} * \text{IDG} + \text{ADJUSTED RATE} * \text{ITS}$$

Social Tariff Index (ITS)

- ▶ The purpose of the Social Tariff Index is to provide for an additional automatic increase in the user's tariff if the percentage of savings that benefit from the social tariff, according to the criteria established in Casal's own regulation, exceeds the limit established in the contract, which is 8.5%.
- ▶ Therefore, it will always be equal to zero if the percentage of economies benefiting from social tariffs within the scope of the concession is less than 8.5%.
- ▶ If the percentage is higher than 8.5%, ITS will be calculated according to the formula below:

$$ITS = \frac{0,5 * TS - 4,25\%}{95,75\%}$$

- ▶ Where TS is the percentage of economies benefiting from social tariff.
- ▶ To ensure there is always the correct measurement of this percentage, the concessionaire must perform an annual registration of beneficiaries 2 months before the time of the adjustment.
- ▶ **It is an automatic rebalancing mechanism of the contract.**



Contract

▶ **Tariff reviews**

Ordinary (limited scope: amendment/revision of the regional basic sanitation plan (RBSP) and/or investments made by municipalities/state)

Extraordinary (scope: occurrence of a risk event not attributable to the concessionaire)

▶ **Rebalancing mechanisms:**

Marginal cash flow + Contractual pre-definition of the discount rate calculation formula

▪ **Discount rate**

Where:

$\sum_{a=1}^{t-(n-1)} NPV$: Sum of cash flow margin from the year of origin of the reset event to the last year of cash flow Margin [t-(n-1)];

CFMy (cash flow margin resulting in the year): Cash flow margin resulting in year “y,” considering the sum between; (i) flow margin resulting from the event that led to the reset; and (ii) flow margin necessary to restore the economic and financial balance;

y: Year of origin of the reset event;

n: Year of the concession when the observed imbalance occurs;

t: Year of termination of the concession;

NTNBs: Value of the daily average of the last 12 months of the Treasury Notes with semiannual interest due on 08/15/2050, or equivalent;

Spread or Interest surcharge: It is charged on the half-yearly NTB-B interest rate (218.65%).

$$\sum_{a=1}^{t-(n-1)} VPLFCMa = 0$$

$$VPLFCMa = \frac{FCMa}{(1 + NTNBs \times SPREAD)^a}$$



Contract

Risks allocated to the grantor:

- ▶ Noncompliance, by the regulatory agency and/or contracting party, of its contractual or regulatory obligations.
- ▶ **Delay in the fulfillment** by the contracting party **of its obligations related to expropriation or administrative easement**.
- ▶ **Unilateral change that causes imbalance of the contract**.
- ▶ **Edition of rules** applicable to the concession or other determinations of the regulatory agency that **change the performance goals**, as well as **other conditions** for the provision of services.
- ▶ **Factum principis or Administration act** that causes imbalance.
- ▶ Creation, alteration or extinction of **taxes** or legal charges, both for more and for less (except income taxes).
- ▶ Specific legislative alteration.
- ▶ **Unforeseeable circumstances or force majeure**, which cannot be insured or exceed the limit of the policies.
- ▶ Proportion of users with a **social tariff exceeding 8.5%** of the total indicated in the public notice.
- ▶ **Delay in works and activities** resulting from the **delay in obtaining environmental licenses**, not attributable to the contractor.
- ▶ **Acts or facts, occurred before the transfer date of the existing system**, that are not the responsibility of the contractor.

Legal aspects // Public notice and contract concepts



Contract

Risks allocated to the grantor:

- ▶ **Environmental damages**, environmental assessments or legal actions related to possible environmental damages, as long as the contractor is **in compliance with the performance goals**.
- ▶ **Judicial and administrative determinations** to satisfy obligations originally imputable to the contracting party.
- ▶ **Archaeological risks**, including the possible discovery of historical and archaeological sites.
- ▶ Unavailability of **electricity**, due to facts attributable to the contracting party.
- ▶ **Delays or losses** in the execution of the services, the complementary services and the execution of the system improvement works resulting from interference caused by **social movements** and/or the **presence of indigenous populations, quilombolas and any other traditional peoples** and communities.
- ▶ Extraordinary variation in the **cost of specific inputs**, thus understood as the variation above 10% (ten percent) of ICR.
- ▶ **Social events** that affect the provision of services in any way, including strikes by public officials.
- ▶ Delays or suspensions in the execution of the contract due to **judicial or administrative decisions**, not attributable to the parties.
- ▶ Supervenience of administrative, judicial or arbitral award that **prevents the contractor from charging fees**, readjusting or rebalancing them.



Contract

Risks allocated to the grantor:

- ▶ Increase in the **price of water** charged by Casal, arising from the request for economic and financial rebalancing of the program contract.
- ▶ Risks related to the **water availability** of the system.
- ▶ **Contractual** breaches of the obligations of **Casal, Sanama and Sanema**, which cannot be rebalanced under the interdependence contract.



Contract

Risks allocated to the concessionaire:

- ▶ **Variation in demand for services**
- ▶ Population growth or not;
- ▶ Population density different from predicted;
- ▶ Default by users;
- ▶ Existence of irregular connections;
- ▶ Change in housing profile or consumption pattern or user composition.
- ▶ **Expansion of the concession area** (due to the transformation of rural areas into urban areas).
- ▶ **Obtaining licenses, permissions and authorizations** necessary to execute the object of the contract.
- ▶ **Expenses resulting from hidden defects in the bound assets.**
- ▶ **Environmental risks arising from the operation, excluding known and unknown liabilities, prior to the start date of the operation.**



Contract

Risks allocated to the concessionaire:

- ▶ **Variation in the Capex and Opex cost of the concession, except for variations in inputs greater than 10% of the variation in the parametric adjustment formula.**
- ▶ **Geological and climatic risks.**
- ▶ **Technological presence employed in works and services.**
- ▶ **Damage caused to the bound assets.**
- ▶ **Unavailability of financing and/or increase in the cost of capital, including that resulting from increased interest rates.**
- ▶ **Variation in exchange rates.**
- ▶ **Failures in basic and executive projects, in the execution of works and infrastructure applied to services.**
- ▶ **Delays and additional costs in carrying out the system improvement works.**
- ▶ **Unforeseeable circumstances and force majeure** subject to the required insurance coverage, up to the limit of the policies.
- ▶ **Losses caused to third parties** in the exercise of concession activities.
- ▶ **Losses due to risks inherent to the business activity.**



Contract

Risks allocated to the concessionaire:

- ▶ Investments, payments, costs and expenses arising from **expropriations, institution of administrative easements, imposition of administrative limitations or provisional occupation of real estate.**
- ▶ Occurrence of a **collective bargaining agreement, agreement or convention** or **failure to supply materials and services** by the contractor's employees, as well as a **strike by its staff.**
- ▶ Losses resulting from **interruptions and/or failures in the supply of materials and services by suppliers and providers subcontracted** by the Contractor, except interruptions and/or failures in the supply of Casal, which will be regulated in the Interdependence Contract
- ▶ **Delays in expropriation procedures**, due to the contractor's fault.



Interdependence agreement

Interdependence agreement // Object



Contract

The interdependence contract will regulate the relationship between the concessionaire and Casal as a wholesale water supplier.

► MUNICIPALITIES COVERED

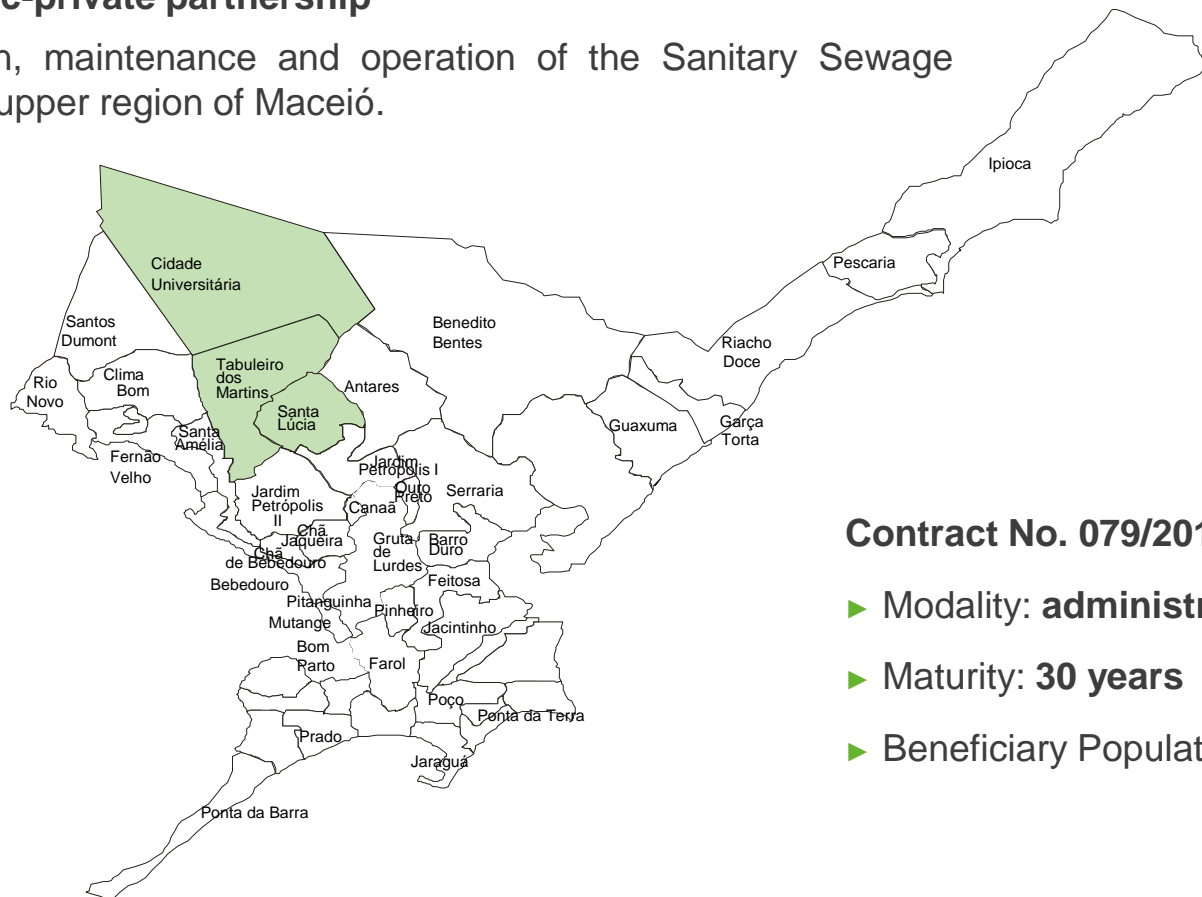
Municipalities	Villages
Barra de São Miguel	--
Coqueiro Seco	--
Maceió	--
Messias	--
Murici	--
Paripueira	--
Pilar	--
Rio Largo	Utinga Leão Campo do Central Plant
Santa Luzia do Norte	--
Satuba	--

- **CASAL:** collection, supply and treatment of raw water, supply of treated water until the entrance to the distribution reservoirs.
- **CONCESSIONAIRE:** reservoir and distribution of treated water and sanitary sewage.
- **EXISTING CONTRACTS:** Sanama and Sanema.

Interdependence agreement // SANAMA PPP

Sanama public-private partnership

Implementation, maintenance and operation of the Sanitary Sewage System in the upper region of Maceió.



Contract No. 079/2014

- ▶ Modality: **administrative concession**
- ▶ Maturity: **30 years**
- ▶ Beneficiary Population: **216,000 inhab.**

Interdependence agreement // SANAMA PPP

Object

- ▶ **Implementation, operation and maintenance of the sanitary sewage system** sectors 25, 26, 27, 31, 34 and 35 of the upper region of Maceió;
- ▶ Operation and maintenance of the sewage system in sectors 30, 32 and 33 of the upper region of the City of Maceió;
- ▶ **Complementary services related to Hydrometer Reading, Inspection, Collection and Commercial Management** aimed at increasing CASAL's collection in sectors 25, 26, 27, 30, 31, 32, 33, 34 and 35 of the Benedito Bentes Business Unit.
- ▶ It serves the neighborhoods of: Cidade Universitária, Benedito Bentes, Salvador Lira, Henrique Equelman, Santa Lucia, Clima Bom and part of Antares.

Status

- ▶ Investment made up to October 2019: R\$ 53 million (31.5% of the expected R\$ 168 million).
- ▶ The works were launched in October 2015 and are expected to be completed in October/2020.

Interdependence agreement // Interdependence agreement



SANAMA

- ▶ CONCESSIONAIRE: water distribution and the following services.

Contract

MEASURE	SANAMA	CONTRACTOR
Action 1: Development, Implementation and Operation of the Management, Programming, Distribution, Supervision and Monitoring Services System	<ul style="list-style-type: none"> To implement a demand management system for the commercial area. To develop and schedule actions to increase revenue and reduce defaults and submit the scheduled actions for prior approval by the CONTRACTOR. To forward monthly management reports to the CONTRACTOR. 	<ul style="list-style-type: none"> To maintain access to the SANAMA AREA database for SANAMA, so that SANAMA is able to maintain the full operation of the services; CASAL shall share database with CONTRACTOR, for monitoring
Action 2: Consumer Registration	<ul style="list-style-type: none"> To forward to the CONTRACTOR the proposal to update the registration; To update the registration, for customer re-registration, after the CONTRACTOR's approval; The registration periodicity is made in agreement with the CONTRACTOR. 	<ul style="list-style-type: none"> To perform registration in the field, in case of new projects and requests for new connections; Deliver the new data to SANAMA to update its database.

Interdependence agreement // Interdependence agreement



SANAMA

Contract

MEASURE	SANAMA	CONTRACTOR
Action 3: Fraudsters Hunt	<ul style="list-style-type: none"> To conduct surveys for fraudulent consumption surveys at the building extensions of the water connections served in the project area. To request the CONTRACTOR's approval for cutting or removing connections. After the analysis of the CONTRACTOR is authorized to cut or remove the connection. To cut, apply fines and sanctions and direct the client to the CONTRACTOR to carry out all debt negotiation 	<ul style="list-style-type: none"> To analyze, together with SANAMA, the consumption history and customer profile. To issue court orders to SANAMA; To assist the client, verifying all the reasoning for the collection of the irregularity and requiring the presentation of a photo that proves the fraud.

Interdependence agreement // Interdependence agreement



Contract

SANAMA

MEASURE	SANAMA	CONTRACTOR
Action 4: Adequacy of Measurement in Large Consumers	<ul style="list-style-type: none"> To maintain a permanent monitoring and control structure for Large Consumers, which will ensure that their consumption meters are correctly sized and functioning. To perform preliminary inspection of large consumers and update registration; To survey the consumption histogram, dimensioning and meter specification; Replace, adapt and maintain water meters, easels and shelters; To resize the building extension of the Large-sized Client 	<ul style="list-style-type: none"> To monitor the provision of the service by SANAMA, suggestively. To periodically monitor the updating of this database
Action 5: Collection of Overdue Debts	<ul style="list-style-type: none"> To implement sanctions and fines, and when applicable, register illegal consumption, after approval by the CONTRACTOR. SANAMA does not negotiate any debts directly with the client. 	<ul style="list-style-type: none"> To negotiate all debts directly with the client, whether friendly or not. To inform SANAMA to implement sanctions and fines.

Interdependence agreement // Interdependence agreement



Contract

SANAMA

MEASURE	SANAMA	CONTRACTOR
Action 6: Hydrometer Reading with Simultaneous Invoice Issuance	<ul style="list-style-type: none"> To coordinate, control and execute the reading of hydrometers and recording of the data, through micro data collectors; To issue and deliver the accounts. 	-
Action 7: Standardization of Connections	<ul style="list-style-type: none"> To standardize the existing connections, adapting the hydrometer installations, including exchanging parts; exchanging calls with MND; To supply and hydrometers, in clandestine or unmeasured connections; To change the hydrometers. 	<ul style="list-style-type: none"> To make new connections.

Interdependence agreement // Interdependence agreement

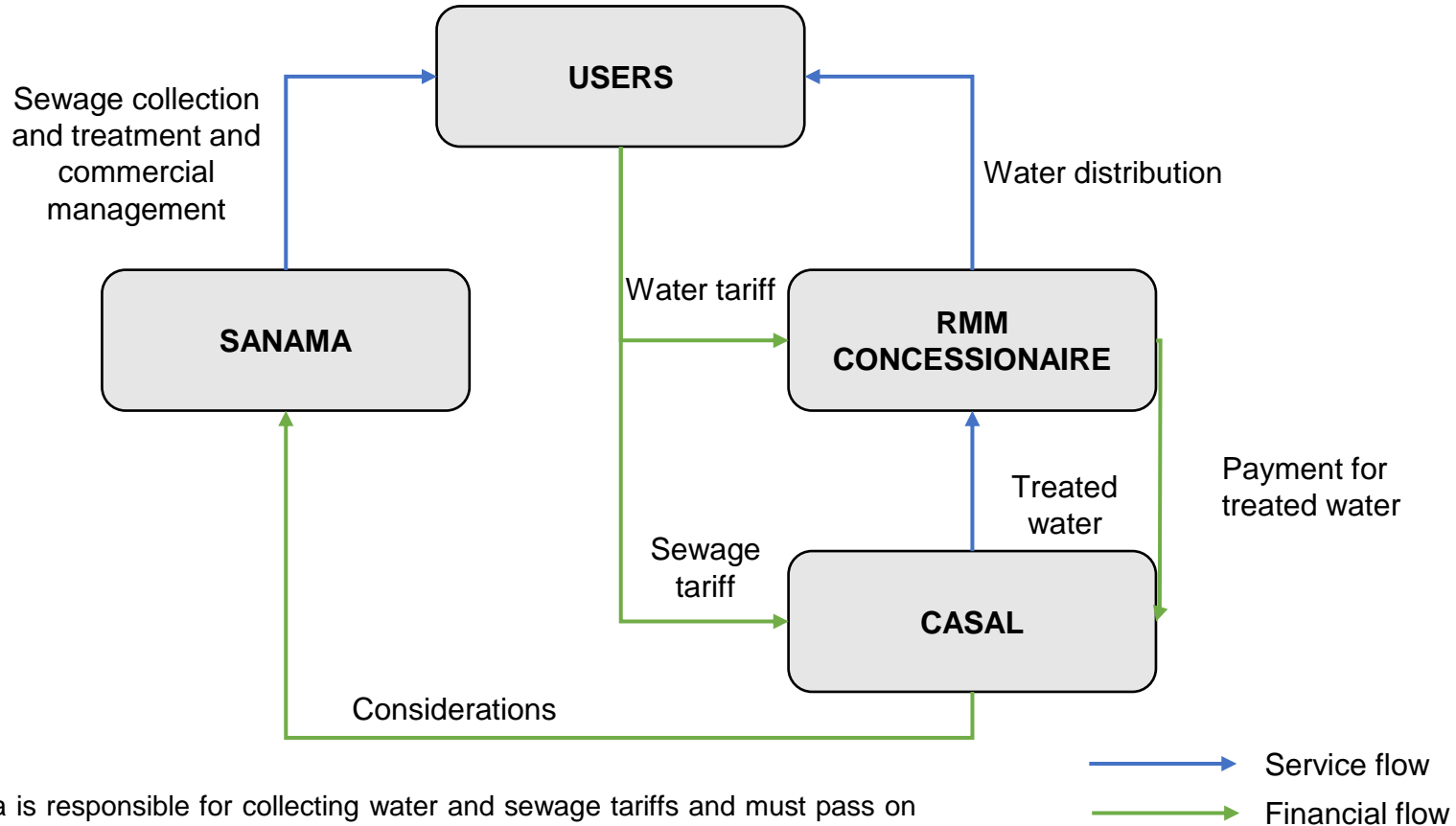


SANAMA

- Contract**
- ▶ End of Contract No. 079/2014: Concessionaire is responsible for the sewage system and commercial management.
 - ▶ In the last 2 (two) years of the term of Administrative Concession Agreement No. 079/2014, the **concessionaire may monitor the operation of Sanama**, to verify the operational and conservation status of the reversible assets, being responsible for carrying out the works and repairs necessary for the correct operation of the system at the time of the reversal. Casal must communicate to Sanama the need for these works and repairs.
 - ▶ Upon the end of the term of Administrative Concession Agreement No. 079/2014, **Casal must provide all engineering projects prepared by Sanama**, and must also deliver the as-built works, the technical and commercial registration and environmental licenses and other licenses and existing authorizations.

Interdependence agreement // SANAMA PPP

Interaction with the Future Concessionaire of Maceió Metropolitan Region

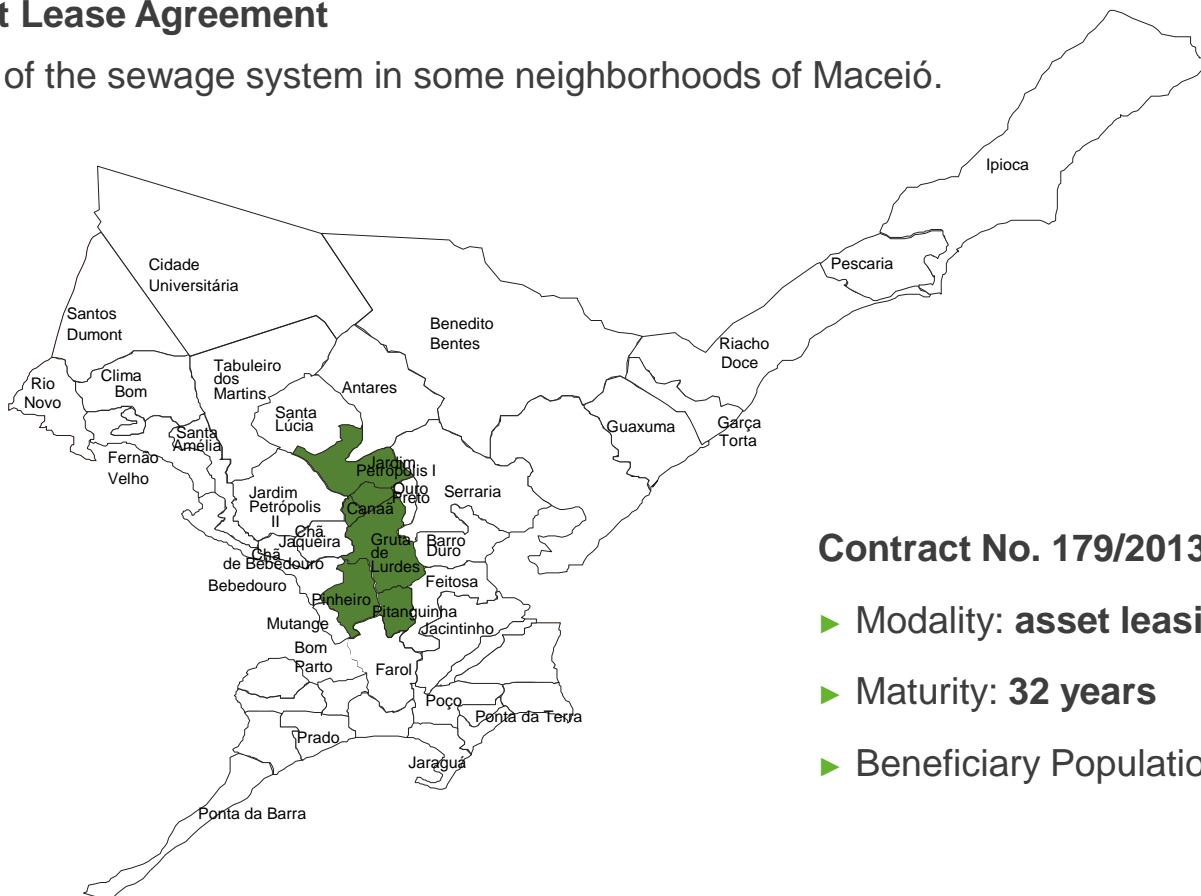


- Sanama is responsible for collecting water and sewage tariffs and must pass on the amounts resulting from the tariff to the concessionaire and Casal.

Interdependence agreement // SANEMA contract

SANEMA Asset Lease Agreement

Implementation of the sewage system in some neighborhoods of Maceió.



Contract No. 179/2013

- ▶ Modality: **asset leasing**
- ▶ Maturity: **32 years**
- ▶ Beneficiary Population: **130,000 inhab.**

Object

- ▶ Leasing of real estate, preceded by the Concession of the Right of Real Right to Use the Areas and the Execution of the Works for the Implementation of a Sanitary Sewage System Composed by a sewage treatment station, interceptors, sewage pumping stations, lift lines and collection networks sewage from the neighborhoods **Farol, Pitanguinha, Sanatório, Pinheiro, Canaã, Santo Amaro and part of Jardim Petrópolis.**

Status

- ▶ Investment made until October 2019: R\$ 18 million (10.4% of the expected R\$ 173.6 million).
- ▶ The works were launched in October 2015 and are expected to be completed in October 2020.

Investments in progress

- ▶ Sewage treatment plant
 - ▶ Nominal capacity: 238 L/s
 - ▶ Type: Activated Sludge - MBBR



Interdependence agreement // SANEMA contract

Investments in progress

- ▶ Emissaries and collectors (600 to 800 mm): 2.1 km
- ▶ Sewage pumping stations: 19 units
- ▶ Collector network (150 to 300 mm): 112 km
- ▶ House connections (100 mm): 185 km
- ▶ Lift lines (150 to 400 mm): 11.3 km



Interdependence agreement // SANEMA contract

Investments in progress

- ▶ Final outfall
 - ▶ Diameter: 600 mm
 - ▶ Length: 443.2 m
 - ▶ Discharge of effluent in Riacho Reginaldo (possibility of reuse)



Interdependence agreement // Interdependence agreement



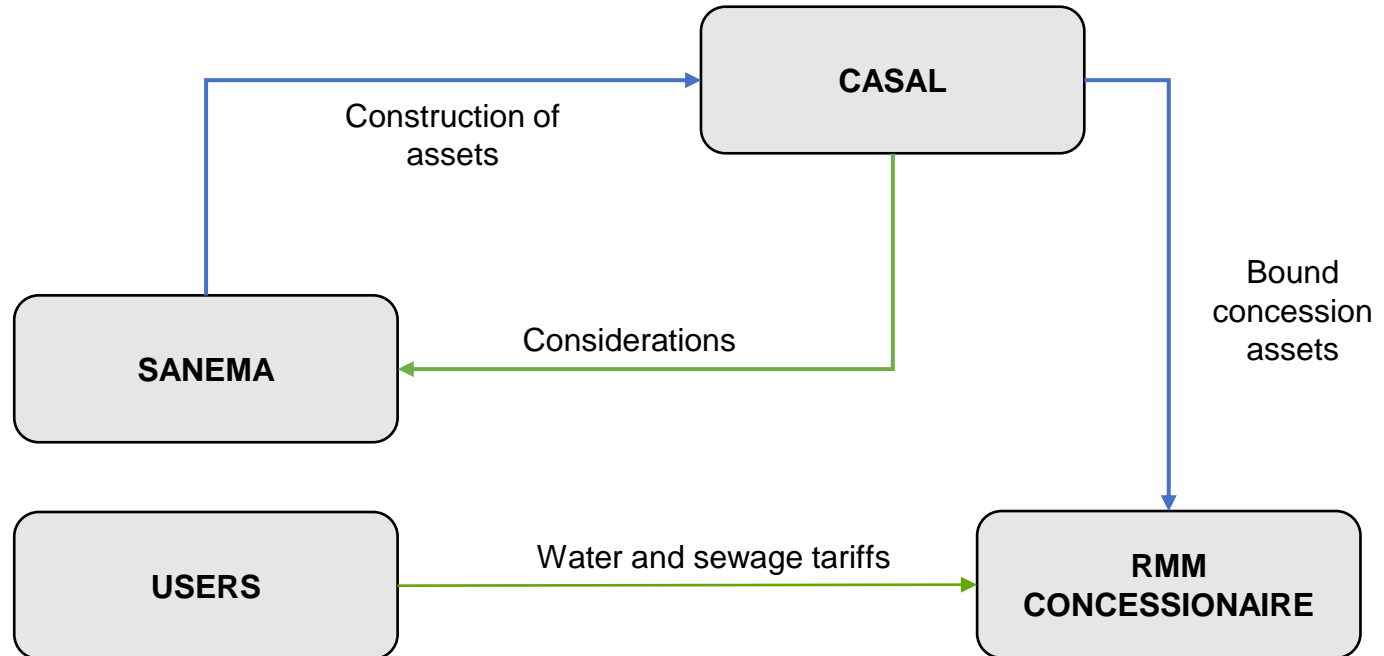
Contract

Sanema

- ▶ The concessionaire may appoint a person responsible for monitoring the construction being carried out by sanema and casal is obliged to obtain the concessionaire's agreement on the construction carried out prior to issuing their acceptances.
- ▶ Casal must supply all engineering projects prepared by Sanema, and must also deliver the as-built works as a precondition for the issuance of acceptance and assumption of services by the concessionaire, and the environmental licenses and other existing licenses and authorizations.
- ▶ If the concessionaire identifies the need for corrections or adjustments to the works being carried out or carried out by Sanema that prevent the full operation of the assets, it must inform Casal and Sanema, prior to the issuance of acceptance, and the necessary corrections must be made, under the terms of the Contract Asset Lease No. 179.
- ▶ If there are delays of more than 6 (six) months in the conclusion of the construction being carried out by Sanema, according to the attached schedule, the concessionaire shall be entitled to economic and financial rebalancing.

Interdependence agreement // Sanema asset lease

Interaction with the future concessionaire of the Maceió RM



*RMM concessionaire must maintain the bound goods in good working order and conservation, at its expense, carrying out the necessary repairs, renovations, adaptations and maintenance.



Interdependence agreement // Interdependence agreement



Contract

► Water price

- Monthly revenue.
- Readjusted by Aرسال at the same time as the public tariff readjustment and the IRC index.

$$\text{PRICE}_a = \text{PRICE}_{a-1} * \text{IRC}$$

In which:

PRICE_a: Water price to be calculated.

PRICE_{a-1}: Water price of the previous year.

IRC: Contractual Adjustment Index.

The IRC, in turn, shall be calculated as follows:

$$\text{IRC} = [P1 \times A + P2 \times (Bi/Bo) + P3 \times (Ci/Co)]$$

In which:

- P1, Ai and Ao: workforce;
- P2, Bi and Bo: electricity;
- P3, Ci and Co: chemicals;

Interdependence agreement // Interdependence agreement



Contract

- ▶ The following table presents the weighting factors of the cost item in the tariff adjustment.

Weight	Item	% of Total
P1	Workforce	30%
P2	Electricity	40%
P3	Chemicals	30%
	Total	100%

Weighting factors may be subject to a five-year review, to be requested by Casal to the Regulatory Agency.

Interdependence agreement // Interdependence agreement



Contract

Water supply

- ▶ Delivery point: entrance to each reservoir.
- ▶ Measurement of the volume delivered by means of an electromagnetic flowmeter (measurements available in real time, for 24 hours). The concessionaire shall be responsible for the acquisition, installation and proper functioning of the meter
- ▶ Possibility of contesting the values measured by Casal.
- ▶ Mandatory purchase of a minimum volume of water until the 3rd year of the Concession Agreement.
- ▶ Demand planning submitted by the concessionaire, with a mandatory availability of a minimum volume by Casal, throughout the entire contract term. Demands greater than the minimum volume must be previously aligned between the parties.
- ▶ In the event that the planned volume cannot be supplied, the concessionaire may:
 - Contract third-party providers;
 - Make extraordinary investments in Casal's infrastructure, ensuring economic-financial balance;
 - Make investments in infrastructure that can only be operated provisionally.
- ▶ The state and Casal must comment within 30 days on the concessionaire's request for new investments

Interdependence agreement // Interdependence agreement



Contract

The concessionaire is not required to purchase water exclusively from Casal:

- ▶ Interruption of water supply, until Casal fully restores supply;
- ▶ Nonconformity in the quality of the water supplied by Casal, until the quality levels of the water supplied are adjusted;
- ▶ Impossibility to supply the expected demand.

Economic and Financial Balance

- ▶ The interruption of water supply by Casal to the concessionaire, due to an event not characterized as force majeure or unforeseeable circumstances, which impacts the provision of services under the responsibility of the concessionaire;
- ▶ Non-compliance with Casal's minimum supply obligations, provided that there is operational demand from the concessionaire.

* The increase in the price of water due to the rebalancing of the program contract implies a rebalancing of the concession agreement.

Interdependence agreement // Interdependence agreement



Contract

- ▶ Arbitration: Disputes that cannot be resolved amicably between the parties will be definitively resolved by arbitration, by 3 (three) arbitrators who will be chosen from natural persons of recognized reputation and knowledge of the subject matter of the controversy.
- ▶ Center for Arbitration and Mediation of the Chamber of Commerce Brazil-Canada.



Performance indicators

9 indicators will be monitored to ensure the service quality and the achievement of the defined goals.

- ▶ Failure to comply with the indicators will result on tariff discounts, reducing the concessionaire's revenue.
- ▶ The indicators have different weights in the Global Performance Index (IDG).

$$IDG = \sum_{i=1}^n P_i \times ID_a^{Norm} i$$

Where:

P_i – Weight of performance indicator i ;

$ID_a^{Norm} i$ – Performance indicator i normalized and adjusted;

n – Number of performance indicators.

Monitored Indicator	Weight in IDG
Full Water Coverage (IUágua)	13.2%
Water Loss Index (IPA)	10.5%
Water Quality Compliance (IQA)	7.2%
Full Sanitary Sewage Coverage (IUesg)	13.2%
Compliance of Treated Sewage Effluent (IQE)	7.2%
Percentage of Collected Sewage Treatment (ITE)	12.5%
Leakage Index (IVAZ)	9.9%
Continuity of Water Supply (ICA)	10.5%
Quality of Customer Service (IAU)	8.6%
Environmental Regularity of Treatment Systems (IRA)	7.2%

Performance indicators // General aspects

Indicator Standardization

- ▶ Considering that reference values and performance goals differ among the indicators, they are normalized for comparison.

$$ID_i^{Norm} = \frac{X_{ID} - X_{pp}}{X_{meta} - X_{pp}}$$

Where:

ID_i^{Norm} – Standardized Performance Indicator i .

X_{ID} – Measured value of the performance indicator i .

X_{pp} – Worst possible value of performance indicator i .

X_{meta} – Target value of the Performance Indicator i .

- ▶ Since the IDG is calculated annually but some indicators are measured more frequently, a weighted average is made in which higher weights will be attributed to measurements closer to the tariff adjustment date.

Indicator	Worst possible value (X_{pp})
IUágua	60%
IPA	65%
IQA	0%
IUesg	10%
IQE	0%
ITE	0%
IVAZ	100%
ICA	0%
IAU	0%
IRA	0%

Tolerance

- ▶ To account for limitations in the measurement of the indicators, a tolerance of 1% is allowed.
- ▶ The first time an ID less than 1 is obtained, the reducing factor applied is reduced by 25%, so that it serves more as a red flag than a penalty.

Grace period

- ▶ Most indicators will only begin to be measured at the end of the 3rd year of contract.
- ▶ Indicators measuring loss, leakage and continuity of supply will begin to be measured at the end of the 5th year. In years 3 and 4, they will be considered fully met.

Maximum Reducing Factors

- ▶ The IDG is calculated and applied to the tariff annually, after the scheduled tariff adjustment has taken place.
- ▶ It is limited to 0.9, i.e., tariffs will be **reduced by 10% at the most** in a given year.

Measurement procedure

- ▶ The IDG will be calculated by the concessionaire and its records sent to ARSAL 60 days before the scheduled tariff adjustment date.
- ▶ ARSAL will have 20 days to review the calculations.
- ▶ The effective tariff calculation will be approved by ARSAL by means of a single administrative procedure, with the support of **an independent verifier**.
- ▶ ARSAL must inform the parties about any eventual divergence.
- ▶ In case a goal is not met due to factors out of the concessionaire's control, it will not be considered in the indicator calculation, provided the concessionaire presents evidence of such an event for ARSAL's evaluation.

Performance indicators // Calculation methodology

Performance Indicator	Description	Formula	Index Components	Frequency	Data collection Source
Full Water Coverage	Measures the coverage of the water supply system by the ratio between the number properties that can be connected to the water distribution network and the total number of properties in the concession area.	$IU_{\acute{a}gua} = \frac{E_{potencial, \acute{a}gua}}{E_{total, \acute{a}gua}} \times 100$	<p><i>E potencial, água</i>: Number of properties that can be connected to the water supply network.</p> <p><i>E total, água</i>: Total number of properties in the concession area.</p>	Annually	City Halls; Concessionaire Records; Records of the Region's Electricity Concessionaire
Water Loss Index	Measures the efficiency of water collection, consumption and billing.	$IPA = \frac{(VD - VC - VS)}{VD} \times 100$	<p><i>VD</i>: Volume l of water entering the concessionaire's reservoir, in m³.</p> <p><i>VC</i>: Sum of the monthly volume consumed, in m³.</p> <p><i>VS</i>: Volume of water used in the concessionaire's own services, in m³.</p>	Quarterly	Verification via field inspection, operational report, etc. Concessionaire Records
IQA - Water Quality Compliance	Measures legal conformity of the water supply system from the percentage of water quality analyses found to be within current legislation and environmental agency standards.	$IQA = \frac{Nam\ conf}{Nam\ realiz} \times 100$	<p><i>Nam conf</i>: Number of compliant samples</p> <p><i>Nam realiz</i>: Total number of samples collected</p>	Monthly	Monitoring by physical-chemical, bacteriological and microbiological analysis in the laboratory and in the field.

Performance indicators // Calculation methodology

Full Sanitary Sewage Coverage	<p>Measures the coverage of service supply by the ratio between the total number of properties that can be connected to the collection network and the total number of properties in the concession area. Note that all collected sewage should be treated.</p>	$IU_{esg} = \frac{E_{potencial\ esg}}{E_{total\ esg}} \times 100$	<p><i>Epotencial esg</i>: Number of properties that can be connected to the collection network.</p> <p><i>Total E, esg</i>: Total number of properties in the concession area.</p>	<p>Annually</p>	<p>City Hall Concessionaire Records</p>
IQE - Compliance of Treated Sewage Effluent	<p>Assesses the Concessionaire's responsibility in the preservation of water resources by complying with CONAMA Resolutions 357 and 430 on the quality of treated sewage.</p>	$IQE = \frac{Nam\ conf}{Nam\ realiz} \times 100$	<p><i>Nam conf</i>: Number of compliant samples</p> <p><i>Nam realiz</i>: Total number of samples collected</p>	<p>Quarterly</p>	<p>Monitoring by physical-chemical, bacteriological and microbiological analysis in the laboratory and in the field.</p>
ITE - Collected Sewage Treatment Index	<p>Measures how much of the collected sewage is sent to treatment (treatment stations or marine outfall).</p>	$ITE = \frac{VET}{VEC} \times 100$	<p><i>VET</i>: Monthly volume of sewage that flows to the Treatment Plants, either measured or estimated at the entrances to the Sewage Treatment Plants and for submarine outfalls.</p> <p><i>VEC</i>: Monthly volume of collected sewage, estimated according to the volume of water supplied</p>	<p>Quarterly</p>	<p>Commercial registration of the concessionaire</p>

Performance indicators // Calculation methodology

IVAZ - Leakage Index	<p>Measures the occurrence of sewage leaks resulting from improper operation of the sewage collection network.</p>	$IVAZ = \frac{NVAZ}{CIO}$	<p><i>NVAZ</i>: number of leaks in the sewage collection system in the concession area. <i>CIO</i>: Total length of the collectors in the concession area.</p>	<p>Quarterly</p>	<p>Verification by field inspection, operational report, etc. Concessionaire Records</p>
ICA - Continuity of Water Supply	<p>Measures continuity of the water supply to the population from registered complaints on lack of water due to system inoperability or low pressure gauge in the water supply network.</p>	$ICA = \frac{NRC\ prazo}{NRS\ regist} \times 100$	<p><i>NRCprazo</i>: Number of complaints regarding continuity of supply answered within the deadline (48h). <i>NRS regist</i>: Number of complaints and requests recorded.</p>	<p>Quarterly</p>	<p>Registration of complaints by the Call Center System and Sewage Control Center (CCSE).</p>
IAU - Quality of Customer Service	<p>Measure complaints and requests for services not met on time, such as undue charges, new connection requests, suspension or reconnection, water meter change, among others.</p>	$IAU = \frac{NRS\ prazo}{NRS\ regist} \times 100$	<p><i>NRS prazo</i>: Number of complaints and requests not related to continuity that are answered within the deadline. <i>NRS regist</i>: Number of complaints and requests recorded.</p>	<p>Quarterly</p>	<p>Registration of complaints by the Call Center System and Sewage Control Center (CCSE).</p>
IRA - Environmental Regularity of Treatment Systems	<p>Assesses compliance with legal requirements for licensing and environmental granting of water supply and sewage system installations.</p>	$IRA = \frac{NiLO}{NiT} \times 100$	<p><i>NiLO</i>: Number of installations with currently valid operating license/operating grant. <i>NiT</i>: Total number of installations that require licenses.</p>	<p>Annually</p>	<p>Record of environmental audits performed.</p>

Performance indicators // Goals by municipality

Measurement by municipality

- ▶ The performance indicators should be consolidated over the entire concession area, except in the following cases:
 - ▶ IUágua should be calculated by municipality for year 6, when all municipalities should reach the 100% goal.
 - ▶ The IUesg should be calculated by municipality according to the following table for years 6, 8, 11 and 16.
 - ▶ Municipalities that do not meet the intermediate goals will continue to be monitored in the subsequent years until they are met.
 - ▶ For these years, the consolidated coverage indexes will be multiplied by the percentage of municipalities that reached the target, considering weight 2 for Maceió, weight 1.5 for municipalities over 50 thousand inhabitants and weight 1 for the others.

Municipality	Year 6	Year 8	Year 11	Year 16
Atalaia	67.5%	90.0%	90.0%	90.0%
Barra de Santo Antônio	67.5%	90.0%	90.0%	90.0%
Barra de São Miguel	67.5%	90.0%	90.0%	90.0%
Coqueiro Seco	33.8%	45.0%	61.9%	90.0%
Maceió	75.9%	90.0%	90.0%	90.0%
Marechal Deodoro	90.0%	90.0%	90.0%	90.0%
Messias	49.1%	65.5%	90.0%	90.0%
Murici	49.1%	65.5%	90.0%	90.0%
Paripueira	67.5%	90.0%	90.0%	90.0%
Pilar	33.8%	45.0%	61.9%	90.0%
Rio Largo	67.5%	90.0%	90.0%	90.0%
Santa Luzia do Norte	33.8%	45.0%	61.9%	90.0%
Satuba	33.8%	45.0%	61.9%	90.0%



Thank you!