

Navigating Future Waterways



Brazil Water Innovation Mission to the Netherlands
6 - 10 November 2023



Netherlands

Welkom in Nederland!

It is a great pleasure to welcome all the participants of the Brazil Water Innovation Mission to the Netherlands, organized by the NHL Stenden University of Applied Sciences, the Brazilian Association of State Water Utilities (AESBE) and the Consulate General of the Netherlands in São Paulo. We are excited to promote such a strategic connection and explore possible opportunities together.

Brazil is the largest economy in Latin America and one of the largest economies in the world. The country has experienced exponential growth in its urban population, however, this growth has not been accompanied by investments in sanitation infrastructure, resulting in a backlog of essential works and creating a large deficit. In the last decades, while sectors such as energy, telecommunications and transport managed to reach high levels of coverage of the national population and territory, the expansion of the water and especially sewage networks have developed in a rather historically slow pace.

Encouraged by Brazil's New Regulatory Framework, the sanitation market in Brazil has presented, in recent years, a growing demand for investments: Brazil will invest nearly EUR 130 billion to universalize access to drinking water and treatment of wastewater by 2033. In order to achieve this universal access to water a lot of work has to be done, both from infrastructural as an efficiency wise perspective (through for example innovative solutions). It is expected that the market will offer more and more opportunities with regards to the entire business chain: from projects and consulting, through construction to the operation of systems.

Observing this significant Brazilian sector as well as some recent advances verified by public and private entities, there are opportunities for business development between Dutch and Brazilian companies and institutions, which could generate benefits for both countries.

This booklet presents eight Brazilian companies providing access to drinking water and sewage treatment to communities in highly dense cities, up to remote villages in the countryside. I am particularly proud to see this group gathering in the Netherlands this week, aiming to bring long-term integrated solutions for the benefit of all. I am convinced that this mission will prove an excellent opportunity for Brazilian and Dutch parties to exchange knowledge and ideas, build partnerships that last and will lead to business that promotes innovative and sustainable solutions for the Brazilian market.

On behalf of the Netherlands economic network in Brazil, AESBE and NHL Stenden, we wish all those participating in this mission a lot of inspiration and success!



Wieneke Vullings

Consul General of the Kingdom of the Netherlands in Brazil



Jooske Haije

Director Academy Technology & Innovation



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Delegation

CAGEPA



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Company Profile

CAGEPA operates in the state of Paraíba, in the north-east of Brazil, serving the urban areas of 225 locations, comprising of 201 towns and 24 districts. Population served for drinking water - 72.16 % total population - 94.53% urban population (approximately 3 million people). For sewage treatment - 29.95 % total population - 39.22 % urban population (approximately 1.2 million People)

Our Challenge Ahead

We are a company located in the semi-arid region of the Northeast. More than 80% of our territory is in this area, characterized by irregular and scarce rainfall. This area suffers major impacts from climate change. In addition, our subsoil is crystalline, which provides limited water that is often brackish.

Topics such as system automation, IoT, desalination, compact and ecological sewage and water treatment plants, energy efficiency, preventing losses, rural sanitation, clean energy generation (with sludge and gas from treatment plants) are some of the themes that we believe have great scope for innovation and new partnerships.

Looking for:

- Drinking water and wastewater treatment plant projects (compact or not).
- New solutions in water desalination technologies and small (compact) drinking water and sewage treatment plants.
- Technologies for loss prevention, operational efficiency (automation of systems).
- Partnerships to develop systems for clean energy generation (using biogas and sludge from treatment plants) and upgrade of old networks.

CAGECE



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Company Profile

Cagece is a mixed economy company, operating in 152 municipalities in the State of Ceará (all of which are served with water supply and 80 municipalities with sewage treatment services) and serves more than 5.59 million inhabitants.

Our Challenge Ahead

The company maintains a water network of 16,400 km and 5,200 km of sewage network. The water and sewage coverage rate in the State is 98.49% and 44.72%, respectively. Regarding Water Treatment Stations, in total, Cagece has 149 water treatment plants and 275 sewage treatment units and 291 sewage pumping stations.

Looking for:

- Universities and companies providing technologies for water and sewage treatment and reducing losses in water distribution systems.
- Solutions to mitigate the problems of using raw water from eutrophic sources for treatment and distribution (high organic load, high consumption of chemicals, formation of disinfection by-products, such as trihalomethanes and haloacetic acids).
- Innovative solutions for removal of nitrate from groundwater.
- Systems for in situ improvement of the quality of raw water captured in highly eutrophic sources with an extensive presence of cyanobacteria, aiming to improve the quality of treated water and/or reduce treatment costs.
- Systems for water reuse.
- Systems for sewage treatment aimed at removing nutrients (nitrogen and phosphorus), producing reused water, using AI solutions.

CAESB



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Company Profile

Caesb is a public company responsible for water supply and sewage treatment services in the Federal District of Brazil. The company provides services for the entire population of the Federal District, serving 3.1 million inhabitants, which includes the capital of Brazil – Brasília.

Our Challenge Ahead

Caesb's service levels are above the Brazilian scenario average, with 99% of water services and 92% of sanitation services, with 100% of the sewage collected treated.

Regarding our service levels, our challenges are focused on revitalizing and modernizing operational units, reducing water losses, energy efficiency and modernizing processes.

This creates a window of opportunity for potential partners who can provide innovative solutions to our processes and reduce operating costs.

Looking for

- Solutions for Automation of Operational Units
- Connect with startups for developing solutions with potential for intellectual property registration
- Networking with Universities with proposals for research, development and innovation programs
- Links with partners with tech solutions for water loss reduction
- Partners with energy efficiency proposals for the Water and Sanitation sector



CEDAE

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Company Profile

Providing drinking water for 13 million inhabitants of the metropolitan region of the state of Rio de Janeiro. CEDAE is a mixed-capital public company.

Our Challenge Ahead

Currently, CEDAE has the largest continuous drinking water treatment plant in the world.

Combating the pollution of water sources and developing measures to treat the waste from water treatment plants.

Looking for

- New solutions for water springs treatment.
- Connect with innovative companies with solutions for efficient drinking water treatment.
- Links with partners with tech solutions for water loss reduction
- Partners with energy efficiency proposals for the Water and Sanitation sector

EMBASA



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Company Profile

Embasa primarily serves the urban population in its area of operation, as well as a considerable portion of the rural population located in the vicinity of cities and dispersed throughout integrated systems. The localities served with water supply are located in 368 of the total of 417 municipalities in Bahia state.

Our Challenge Ahead

Provide water supply and sanitation services, with excellence and sustainability, contributing to universalization and improving the quality of life.

Looking for

- Water Treatment Technologies.
- Technologies for the reuse of treated effluents.
- Sewage sludge utilization technologies.
- Water sludge harvesting technologies.
- Asset management projects and techniques.
- Water Loss Reduction Technologies.

Fundação Vanzolini



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Fundação Vanzolini

Company Profile

The Vanzolini Foundation is active throughout Brazil and has already developed sanitation studies for rural areas in the state of São Paulo in partnership with FUNASA (National Health Foundation).

Our Foundation draws up municipal sanitation plans as well as projections of the investments and technologies needed to modernize municipal sanitation companies in technical concession studies.

Our Challenge Ahead

We are coordinating the implementation of a Water Hub with Sabesp (the sanitation company of the state of São Paulo) which should bring together state-of-the-art technological innovation in sanitation in Brazil.

We would like to be a reference for sanitation technologies in Brazil.

Looking for

- Innovative organizations willing to establish contacts for the development of partnerships and technical co-operation.
- Networking with knowledge partners, such as universities, and R&D centers.

IBRAM



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Company Profile

The Brasília Ambiental institute is the government organization responsible for implementing Environmental Policy in the Federal District, working to protect Conservation Units, inspect and certify public and private projects.

Looking for

- New technologies for sewage treatment.
- Links with the sector to improve knowledge in environmental licensing carried out in the sanitation sector.
- Access to new monitoring techniques for water and sewage systems.
- Knowledge and information to support the agency's technical team in proposing new conditions for environmental licenses.
- New techniques for treating and using rainwater.

Our Challenge Ahead

Providing services for the Federal District in Brazil. Covering a population of 2.8 million people

SABESP



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Company Profile

Largest water utility in the country and one of top 5 in the world, servicing around 30 million clients. Currently, the company operates in 368 municipalities in the state of São Paulo.

Sabesp has an innovation unit which monitors tech/innovation opportunities throughout the engineering initiatives.

Our Challenge Ahead

Universalization targets are very well developed. Looking for strategic partners to develop the innovation agenda in drinking water and sewage treatment.

Seeking specialized partners for technology development in areas of water loss, energy efficiency, automation, non-chemical treatments and nutrient recovery.

Looking for

- Tech solutions for loss prevention and remediation.
- Network with knowledge partners, such as universities, and R&D centers.
- Connect with innovative companies with solutions for efficient drinking water treatment.
- Universities and companies providing technologies for water and sewage treatment and reducing losses in water distribution systems.



Team overview

Mission organisation

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