REDUCING NON-REVENUE WATER:
building sustainable cities by taking action against water losses

Water losses: a global challenge

40%

Shortfall in freshwater resources by 2030 coupled with a rising world
Source: UN

800

If the world's volume of NRW was reduced by only one-third, the savings would be sufficient to supply 800 million people
Source: IWA

Optimizing the management of water resources is a global issue, which is turning into a matter of urgency. Climate change, population growth, rampant urbanization... the pressure on water resources keeps increasing.

While having access to clean drinking water is a key issue for citizens, the distribution of drinking water is a major concern for local authorities and operators. They seek to optimize their network performance but also guarantee customers and users the best possible service, while maintaining financial stability and protecting the environment.

A lack of knowledge of the network, misuse of data, inefficient management of distribution system pressures, outdated infrastructures... multiple factors can explain why so much treated water worldwide fails to reach customers, despite efforts undertaken in that field during the last decades.

Non-revenue water (NRW): what is it ?

Non-revenue water refers to water which is supplied to the system but not billed to consumers.
Two types of water losses can be distinguished: physical losses, or leakages and commercial losses, caused by customer meter inaccuracies, poor data handling, fraud and illegal connections.

"Water losses are both a major economic and environmental concern for water utilities. Deploying an efficient management of Non-revenue water not only allows them to deliver a better service to customers and enhance their financial performance, but also helps them to meet their environmental objectives and develop their resilience to climate change. Reducing Non-revenue water in cities is key to make them more sustainable and attractive in the long term."

Béatrice Arbelot
Senior Vice President – Asset and Revenue Performance, SUEZ - Smart & Environmental Solutions

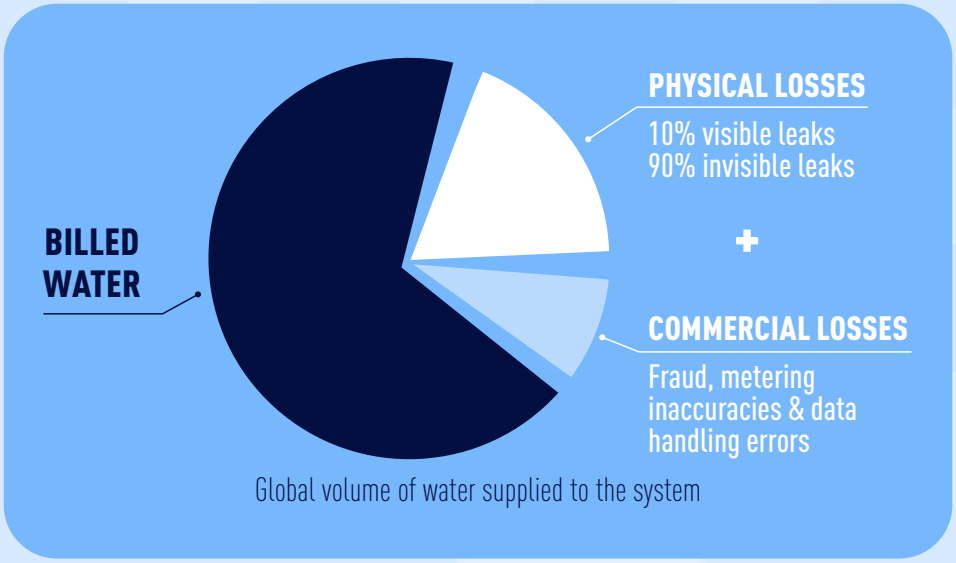
Non-revenue water: a broad issue that requires action

Today Non-revenue water represents:

30%
of water system input volumes across the world
Source: IWA

126
BILLION M3/YEAR
representing nearly 50% of the average flow of the Ganges River
Source: IWA

$39
BILLION/YEAR
The financial cost/value of NRW
Source: IWA



Global volume of water supplied to the system

Why it is important to take action?

An efficient management of NRW reduction benefits everyone: the planet, the cities, the people.
By implementing efficient Non-revenue water strategies, water utilities can:

Improve the service

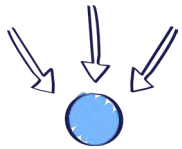
- Reduce leakages and their damages
- Provide service to more customers for longer hours
- Improve tap quality, by reducing contamination
- Better knowledge of the water network
- Increase supply continuity

Optimize investments

- Reduce the need for massive investments in treatment facilities
- Optimize investments for asset maintenance and renewal
- Reduce the investments for new water sources

Improve the environement

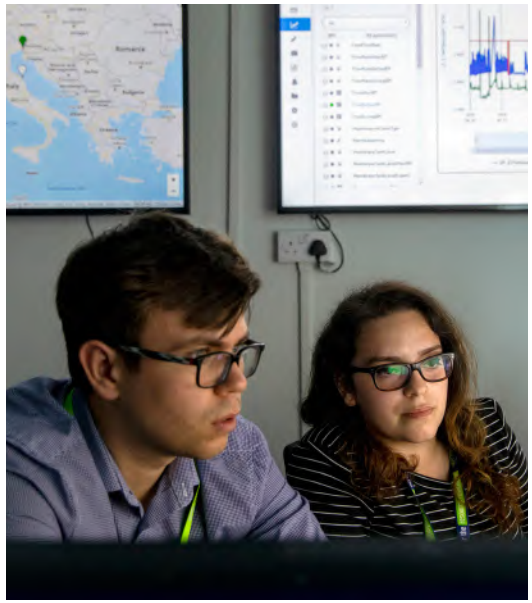
- Reduce demand on water resources
- Reduce energy footprint and green house gas emissions



Increase the revenues of the services

- Increase revenue due to the sale of saved and previously unbilled water
- Decrease energy needs and operational costs

SUEZ, a global and customized approach –



Building on 150 years of experience with local authorities

A major player in environmental services, SUEZ has been supporting cities in the development of essential water, sanitation, waste collection and recovery services for 150 years. Our experience in the management and optimization of water networks allows us to develop efficient solutions adapted to each local context, and to innovate to plan for tomorrow's challenges.

A proven expertise to provide a 360° approach

To reduce losses and optimize drinking water distribution, the full value cycle must be taken into consideration: from diagnosis to the efficient management of leaks, assets and billing. Thanks to our historical expertise in the management and optimization of water networks, we provide a 360° approach and a proven methodology to help reduce Non-revenue water through support in the data management, assessment, planning, coordination and implementation of action plans.

From data to asset servicing: an integral offer covering the entire value cycle

We leverage a unique combination of expertise, technologies, digital tools and on-field services to support our customers in enhancing the performance of their water assets, extending their life cycle, reducing risks of failure and improving their financial efficiency. This expertise allows us to implement tailored solutions to meet the specific constraints and requirements of each customer according to its local context.

Our solutions

Spot leaks

Predict, detect & locate leaks combining advanced inspection technologies with data analytics (Aquadvanced®)

Net vision

Inspect and invest at the right place, at the right time, thanks to a data-driven assessment of your network

Calm network

Optimize the pressure of your network to prevent bursts and reduce leakages while extending assets lifespan

Opti revenue

Reduce commercial losses and improve sustainability based on machine learning

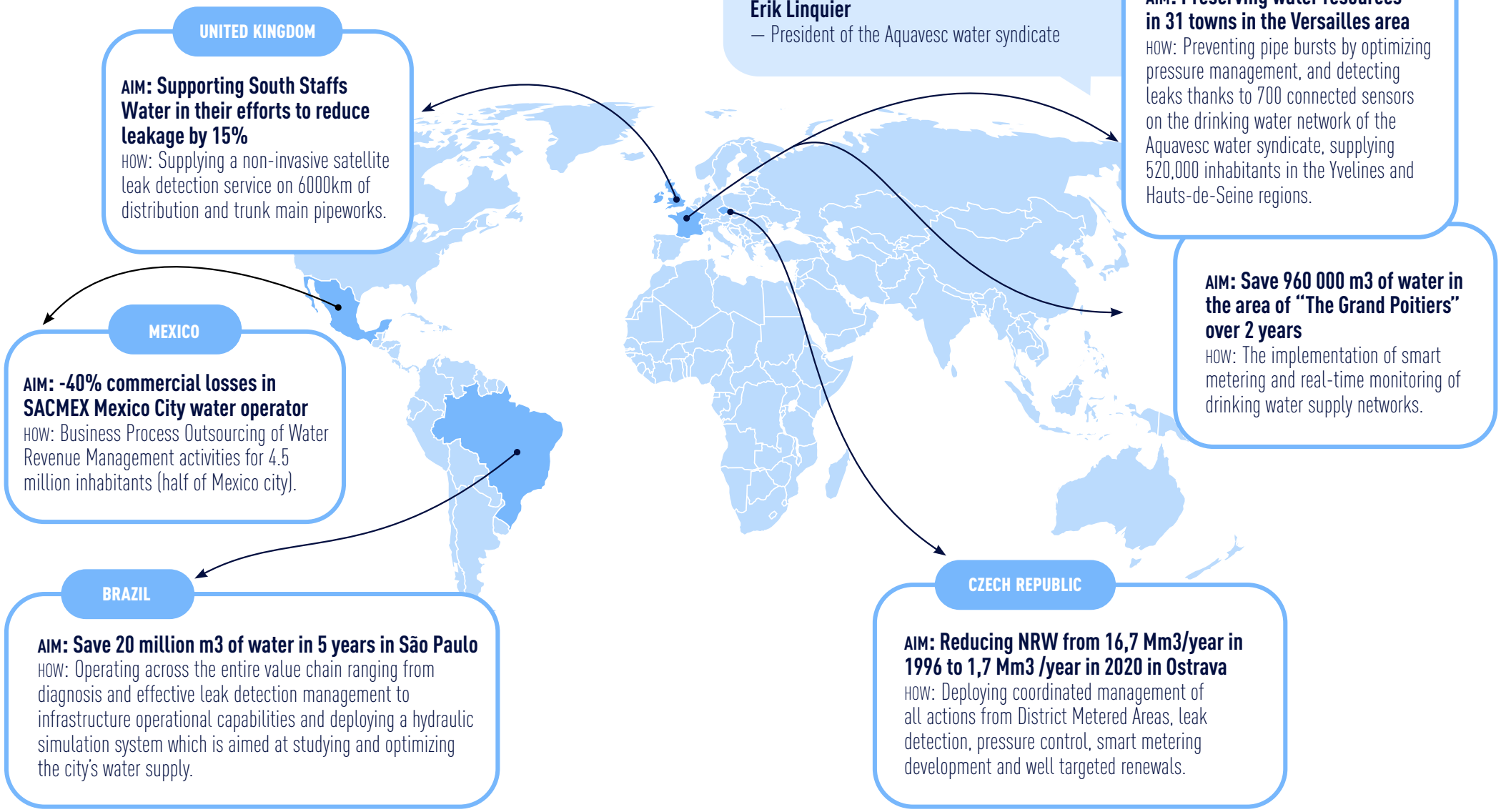
Various contractual forms to deliver our solutions

Contractual innovation, combined with technological, societal and digital innovation, is our trademark.

From a diagnosis or field service to the full implementation of the strategy for NRW in a management contract, we adapt our partnerships to local needs and requirements :

- Consultancy
- Specific services
- Performance-based contracts
- Partial or full NRW strategy implementation

Deploying our NRW expertise on a global scale



> “Calm Network will enable us to interpret the data from our sensors and avoid major pressure variations. This will limit damage to the pipes, and will also be beneficial for the user, who will have a more regular pressure at the tap.”
>
> **Erik Linquier**
> — President of the Aquavesc water syndicate

UNITED KINGDOM

AIM: Supporting South Staffs Water in their efforts to reduce leakage by 15%
HOW: Supplying a non-invasive satellite leak detection service on 6000km of distribution and trunk main pipeworks.

FRANCE

AIM: Preserving water resources in 31 towns in the Versailles area
HOW: Preventing pipe bursts by optimizing pressure management, and detecting leaks thanks to 700 connected sensors on the drinking water network of the Aquavesc water syndicate, supplying 520,000 inhabitants in the Yvelines and Hauts-de-Seine regions.

AIM: Save 960 000 m3 of water in the area of “The Grand Poitiers” over 2 years
HOW: The implementation of smart metering and real-time monitoring of drinking water supply networks.

MEXICO

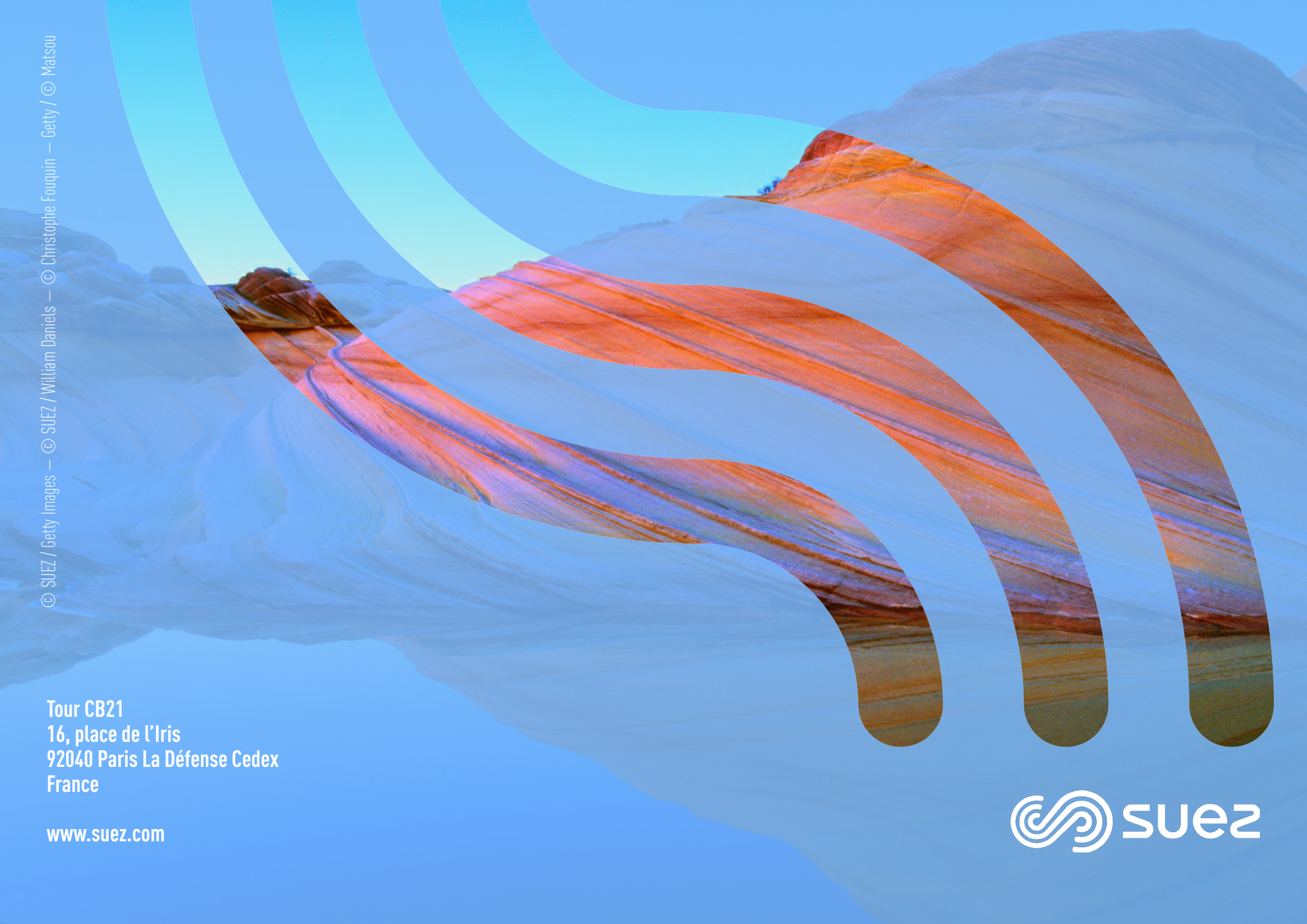
AIM: -40% commercial losses in SACMEX Mexico City water operator
HOW: Business Process Outsourcing of Water Revenue Management activities for 4.5 million inhabitants (half of Mexico city).

BRAZIL

AIM: Save 20 million m3 of water in 5 years in São Paulo
HOW: Operating across the entire value chain ranging from diagnosis and effective leak detection management to infrastructure operational capabilities and deploying a hydraulic simulation system which is aimed at studying and optimizing the city’s water supply.

CZECH REPUBLIC

AIM: Reducing NRW from 16,7 Mm3/year in 1996 to 1,7 Mm3 /year in 2020 in Ostrava
HOW: Deploying coordinated management of all actions from District Metered Areas, leak detection, pressure control, smart metering development and well targeted renewals.



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